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manufacturers record

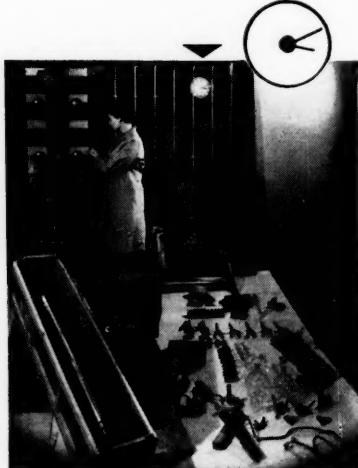
THE NEWSMAGAZINE OF THE INDUSTRIAL SOUTH AND SOUTHWEST

Aircraft Map of South	p. 14
Man on The Spot	p. 18
Industrial Progress	p. 29
New Plant Summary	p. 31
Atoms on the Farm	p. 32
New Southern Products	p. 37



Luring aircraft industry South—like developers throughout region, St. Petersburg's Jack Bryan rolls out red carpet for visiting execs. (p. 8)

A CONWAY PUBLICATION EST. 1882



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TIME
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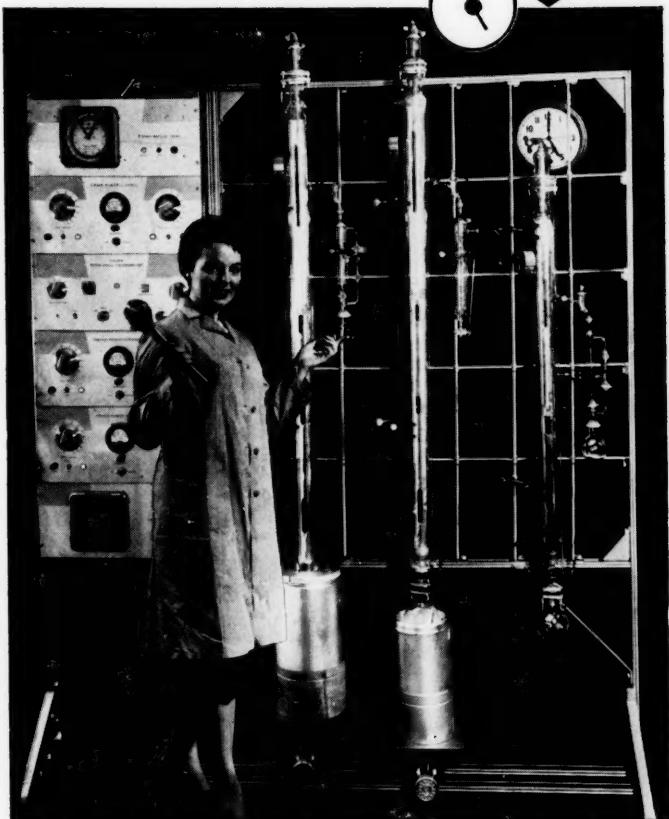
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Manufacturers record

NEWSMAGAZINE OF SOUTHERN
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EPA

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LETTERS

Segregation Editorial Reaps Readers' Praise

SIRS: We read with a great deal of interest your editorial "Segregation is a Wooden Leg" in the May edition of MANUFACTURERS RECORD. Your treatment of this timely topic was excellent, and completely follows our thinking on this subject.

MALCOLM B. MCREE
Informational Writer
State of Alabama
Planning and Industrial
Development Board

SIRS: I have been perusing the data published in your 1956 BLUE BOOK DIRECTORY edition. The comparisons give some food for thought . . . there are many things for which the South still relies on the North and Middlewest. I was somewhat surprised, in the face of all the new paper mills which have been built recently in the South, to find that in spite of the growth between 1939 and 1955, the South was still not getting its share of the pulp and paper business. Perhaps if the data were on a tonnage rather than a dollar basis, the ratio would be different as the northern papers are more apt to be of higher grades. Judging from the planning being done at present, this situation is in the process of change . . . I was interested, too, in the fact that while the South paid only 21 percent of the Federal Tax, it paid 31 percent of the State taxes. This is quite contrary to the impression I had.

C. E. PATCH
Morton C. Tuttle Co.
Boston, Mass.

SIRS: The new 1956 BLUE BOOK DIRECTORY Edition is excellent. It certainly points up the expansion going on in the southern area. We have searched diligently, but we have not been able to detect what classification the capital letters found at the end of each line listing the industries denote. Could you tell us where we could find this information in this issue?

ROBERT A. NANZ
Florida Chemists and Engineers
1709 N. Mills Street
Orlando, Florida

► We regret your difficulty in locating the key to code. It is on page 85.

SIRS: I notice in the "classified products index" in the current issue of MANUFACTURERS RECORD that our company is not listed under "Cast Iron Pipe and Fittings" and would appreciate very much your making this correction as promptly as possible.

CHARLES A. GLENN
General Sales Manager
Lynchburg Foundry Company
Lynchburg, Virginia

SIRS: Will you please advise whether or not you publish the MANUFACTURERS DIRECTORY? If you do publish it, does it take the place of a monthly issue of the MANUFACTURERS RECORD? Our client, Southern Lightweight Aggregate Corporation, is not listed in the directory and we were wondering why they were omitted.

ALFIE SLETTEN
Office Manager
Cabell Eanes, Inc.
Richmond, Virginia

► Reader Sletten evidently refers to our BLUE BOOK-DIRECTORY EDITION

which is issued as a thirteenth number and does not replace a regular edition of the RECORD. Sorry Southern Lightweight Aggregate Corporation was omitted.

Subscribers Air Views on Manufacturers Record

SIRS: I thought you and your associates would be interested in the enclosed copy of a letter we received a few days ago from one of the people to whom we sent a copy of the 1956 BLUE BOOK-DIRECTORY EDITION. The publication certainly contains very valuable information and, while this is the first reply of this nature we have received from out of the State, a number of local people have written to thank us for sending them a copy.

JAMES C. SHELOR, Vice Pres.
Fulton National Bank
Atlanta, Ga.

(Letter Shelor enclosed follows:)

SIRS: We sincerely appreciate your thoughtfulness in providing us with a copy of the MANUFACTURERS RECORD which will be very helpful in our further study of Atlanta and the State of Georgia. This is a most interesting magazine, not only because of the timely articles it contains but also because it is literally "loaded" with very pertinent statistical information and data relating to the southern states and which certainly can be utilized effectively in our surveys . . .

M. O. HARUM, Vice Pres.
Los Angeles, Calif.
Allied Building Credits, Inc.

SIRS: Send 5,000 copies (MANUFACTURERS RECORD) to Louisiana Free Enterprise Association, 328 Chartres Street, New Orleans, La.

WALLACE M. TAYLOR

► Reprints were sent promptly. We're always happy to receive such orders.

SIRS: I do not know how long we have been taking the MANUFACTURERS RECORD, but it is my recollection that we were receiving it at the time I commenced work here 14 years ago. We have previously enjoyed this publication but we are unfavorably impressed with the changes that have taken place in it and have decided not to renew our subscription. . . .

J. L. OSBORNE
Viking Supply Corp.
Dallas, Texas

SIRS: What are our chances of receiving a glossy of some sort of pix depicting Belle of the River, page 7 in May issue? Because we're in the pumping machinery business it caught our attention and would be an interesting addition to our historical file.

ARNE S. MENTON
Warren Steam Pump Co.
Warren, Massachusetts

► Wish we could help, but our cut was made from a similar drawing in the May 1883 MANUFACTURERS RECORD. The only files we have for the early years are our bound volumes.

LETTERS

Author Subscribes For Research Info

SIRS: Over the past years I have written some 30 books for young readers and am now getting under way in the second in a new series about the industries and products of the U.S.A. Entitled "Men at Work in the South," it will describe the industrial activity of the South . . . Will you be kind enough to send me the combined books BLUE BOOK OF SOUTHERN PROGRESS and SOUTHERN INDUSTRIAL DIRECTORY, 1956 edition? I am enclosing my check for \$3 to cover the cost. I think it will be a most valuable thing for me in this project.

HENRY B. LENT
Woodstock, Vermont

Blue Book Omission "Discourages" Reader

SIRS: On March 31, 1952 we advised you of the fact that although we have been members of your association from the beginning and have supported it for these years as members we are not represented in your directory. You replied to our letter on March 26, 1952 and on March 31, 1952 we sent you data requested.

Now your new directory for 1956 is in our hands and we are nowhere represented except in the list of members. While we certainly would not expect to receive any benefit whatsoever from this directory, which in my opinion is a waste of material and only advantageous from the standpoint of your advertising revenue, we would like to be represented in the South Carolina section especially in view of our past effort to get such representation.

I wish you would go into this matter thoroughly and again try to straighten the situation out. We are quite discouraged.

W. B. S. WINANS, Pres.
Southeastern Clay Co.
Aiken, S. C.

► We are discouraged, too. In spite of all precautions some omissions occurred and all we can do is apologize.

Air Conditioning Folks Receive Record Story

SIRS: I am enclosing herewith a copy of the reprint of the article on page 16 of the April issue. We are also enclosing a letter that was sent out to some 150 manufacturers of air conditioning equipment calling attention to your article and also the fact that Laurel is the center of this vast market for their products.

Should the letter bring any results, we will notify you so that your magazine may get full credit for this article calling attention to the fact that the biggest market for air conditioning equipment is in the southern states.

OWEN L. NEATHERY, Exec. Sec.
Chamber of Commerce
Laurel, Miss.

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Courtesy and resourcefulness qualify her for the job. Gaye Evans, telephone company Service Representative, obtains information for a customer regarding his telephone service.

PHOTOGRAPHS BY ANSEL ADAMS

She Likes to Help People

A story about one of the telephone Service Representatives whose "voice has the smile" whenever there's anything you'd like to know about telephone service.

One of the nice things about the telephone business is the way it brings us close to people.

Many, many times each day—in your community and in countless communities throughout the land—we have the opportunity and the privilege of friendly contacts with those we serve. Sometimes they are by telephone. Very often they are personal visits.

Among those who have these contacts are Business Office Service Representatives like Gaye (Mrs. Robert) Evans.

"What we like people to do," says Gaye, "is to think of us as their personal representatives at the telephone company. Whenever there's any question

about service or a bill or you're moving or needing more service, we're here to help in every way we can."

Gaye Evans' job takes a special type of person. One who is not only efficient but understanding as well.

Gaye qualifies in many ways. Even in her leisure hours, she finds time to help others, especially the handicapped and the needy. Another of her activities is rehearsing a 26-girl choir.

Gaye sums up one of her main satisfactions this way: "It's nice to have people think of the telephone company as a place where they can always find courtesy and consideration. That's our job and we try to be good at it."

Helping the Blind. Raising money to provide "Guide Dogs for the Blind" has been one of Mrs. Evans' activities in the Venture Club—an organization of Oakland (Calif.) business women.



BELL TELEPHONE SYSTEM



Senator Gore of Tennessee has proposed that the Government build six atomic-fueled electric power generating plants in various sections of the country. He suggests that private industry is unable or unwilling to develop such facilities.

Regardless of the Senator's intention, his proposal is simply another device for promoting the public power viewpoint. It is certainly not essential to the rapid development of atomic power.

As a matter of fact, private industry has demonstrated that it is eager to get into the nuclear power field. Some fifty-eight companies have already committed more than \$350 million for construction of nuclear reactors.

It was only as late as 1954 that the Atomic Energy Act was revised to permit private companies to plan and build nuclear facilities. Within a few months the AEC began receiving a variety of proposals.

According to a study made by the Chamber of Commerce of the U. S. "it has not been the lack of initiative on the part of investor-owned utilities and equipment manufacturers which has delayed rapid construction of nuclear facilities. Rather it has been excessive governmental regulation and red tape and the necessity to find solutions to technical problems."

The extent of excessive government regulation, the Chamber said, "is manifest in the months of delay experienced by private firms in their attempts to obtain licenses, clearances, construction permits, and fuel allotments from the Atomic Energy Commission."

Even so, the United States is far ahead in construction of reactors. We will have completed through the end of this year a total of 55 units, as compared with 7 for Great Britain, 6 for Russia, and 10 for all other countries. Moreover, we have in the planning stage 35 units, as compared with 23 for Great Britain, 11 for Russia, and 14 for other nations.

As further evidence of private industry's interest in this matter, the electric light and power companies have formed a new technical appraisal task force. This nationwide group will evaluate and stimulate research, and will promote development and construction that will further advance the promise of economical and practical atomic electric power. The task force is composed of some of the nation's leading nuclear engineers and scientists.

Most observers see the Gore proposal as an attempt to create six new "atomic TVA's." If the purpose was simply to promote nuclear power development, the proposal would take an entirely different form. The Government might simply take competitive bids for six power stations to be built by interested firms in areas where economic factors are most favorable.

Moreover, it has already been clearly demonstrated that private industry can handle major atomic developments more efficiently than Government agencies. The AEC realized this at an early date and has established a policy of employing private firms to design, build, and operate major nuclear installations.

For example, the AEC called upon DuPont to build the Savannah River H-Bomb Plant. Carbon & Carbide runs the atomic units at Oak Ridge and Paducah. Proctor and Gamble runs the huge AEC plant at Amarillo.

And private industry has demonstrated capabilities in a variety of other nuclear activities. Just a few weeks ago Babcock & Wilcox began operation in its nuclear plant at Lynchburg, Virginia. This historic unit is the first major facility in the nation erected entirely at private expense to manufacture and test nuclear fuel elements and related products for peace-time use.

Elsewhere in the South, industry has also demonstrated a willingness to tackle atomic developments when given the opportunity. Burlington Mills contributed funds for the first nuclear reactor ever built outside AEC auspices at North Carolina State College at Raleigh.

A survey compiled by the Southern Association of Science and Industry, and published in the RECORD in January of this year, revealed that some one hundred Southern firms today are engaged in nuclear development programs. Thus, any suggestion that industry is "dragging its feet" in this field is sheer political propaganda.

The fact is that a tremendous behind-the-scenes battle over control of atomic power is now coming out into the open. This is a struggle between two old competitors over a new prize.

Public power advocates are determined to gain control of the atomic energy generating program from its very start. The private companies are equally determined to protect their investments. The outcome of the battle may well determine the future course of many related nuclear industries.

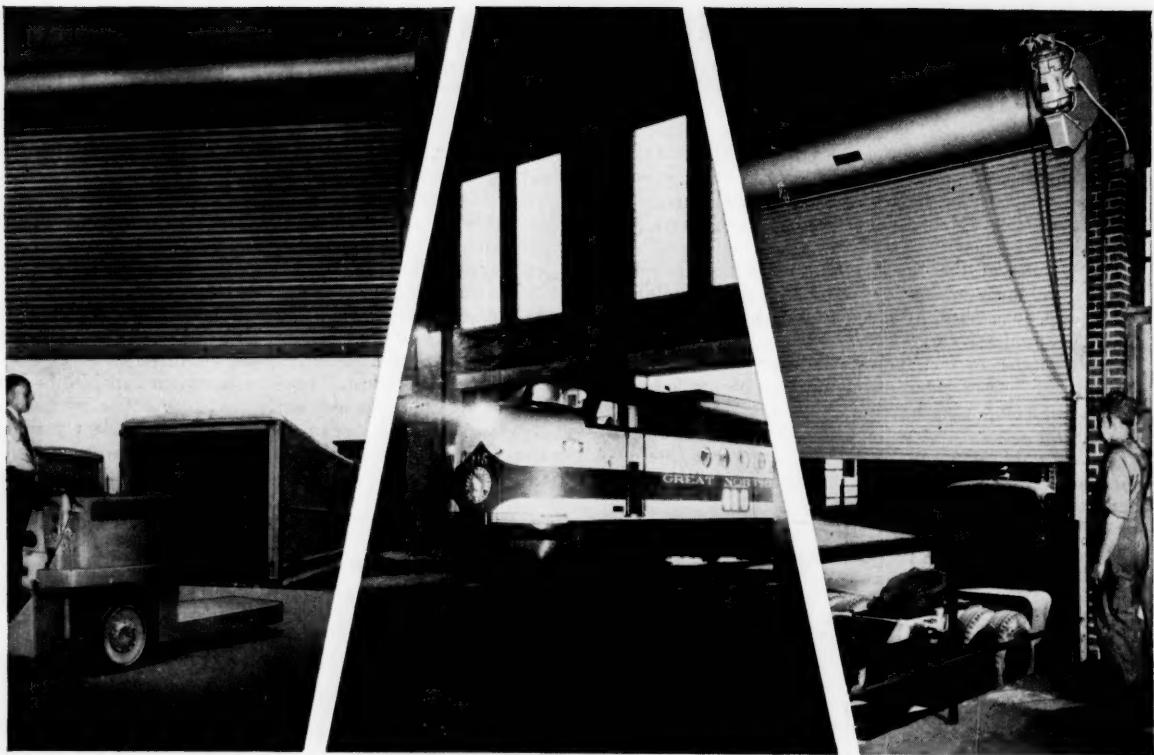
If those of socialistic viewpoint are successful in taking over atomic power, it will be but a hop-skip-and-jump to control of many other technical processes in the future. Every businessman may be the loser.

Meanwhile, the electric power industry must continue to serve as the whipping boy for all American business. As they have before, electric utilities must defend their own interests as well as those of business in general.

Ironically electric power is one of the few items in the cost of living index which has held steady, or even declined, during the recent inflationary period. On the basis of this record the industry certainly deserves an opportunity to develop practical atomic facilities.

—H. M. C.

"It has not been the lack of initiative on the part of investor-owned utilities and equipment manufacturers which has delayed rapid construction of nuclear facilities. Rather it has been excessive governmental regulation and red tape and the necessity to find solutions to technical problems."



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Frank Gould . . . 1930-1943
William Beury . . . 1943-1955
McKinley Conway . . . 1956-

MANUFACTURERS RECORD

(IN REVIEW)



JULY, 1883

(AS ABSTRACTED MORE THAN 70 YEARS LATER)

BALTIMORE, MD.

Good Advice to Southern People

We have frequently taken occasion in the *Manufacturers Record* to urge upon the people of the South the importance of developing the smaller industries rather than to centre all their efforts upon large cotton mills and iron works, and it is a good sign to see how earnestly the best papers of that section are advocating the same thing. The *Enquirer-Sun*, of Columbus, Ga., says that the wealth-producing capabilities of the South have long been appreciated by our people, and their development desired. To this end we have not been slow to invite desirable immigration and the introduction of capital from abroad. These two things we yet desire, but our people make a mistake if they depend upon such influences for the development of our section. We are by no means dependent upon others for the blessings we would enjoy. We very greatly underestimate our own capabilities when we fall into this line of thinking. The development of the South should, really, be accomplished by southerners. As before indicated we desire capital and good people from other sections, but we should never get our consent to sit down in poverty and felicitate ourselves upon the marvelous wealth which has grown up around us, but in which we possess no interest. Nothing save utter want of fidelity to our best interests can bring about such a condition. We have already, by unaided efforts, made gratifying advances on the line of material development and prosperity. While inviting assistance let us cultivate a spirit of dependence upon no one. We have not yet fully measured our strength.

A Booming Town

A few years ago, Anniston, Ala., was merely a country village of about 50 or 100 inhabitants, but it has now developed into a thriving town that seems destined to become a very important industrial centre. It is situated on the Selma division of the East Tennessee, Virginia and Georgia Railroad. Among its incorporated manufactories are the Anniston Cotton Mills, capital \$250,000; Woodstock Iron Co., capital \$200,000; and Anniston Planing Mills, capital of about \$500,000; while very soon the extensive car works now located at Cartersville, Ga. will be removed to Anniston. Lately some extensive schemes have been planned for the development of the territory tributary to this growing town, and the outlook for its future is wonderfully bright. A letter from that town in a Southern paper, in speaking of what is now being done, says:

"Anniston is certainly booming. The opening of the town to the public has resulted in a rush of steady-going folks, who come to make investments. Each train brings from ten to thirty people looking for homes or investments."

And so the good work of developing the South goes steadily on. Day after day new factories are springing up, while the older ones are being improved and enlarged. New

railroads are stretching out into regions hitherto without transportation facilities, while along their lines are growing up vast industrial centres that are to be to the South what Lowell, Holyoke and similar places are to New England.

Manufacturing

A company with a capital of \$100,000 has been organized to introduce the electric light at Columbus, Ga.

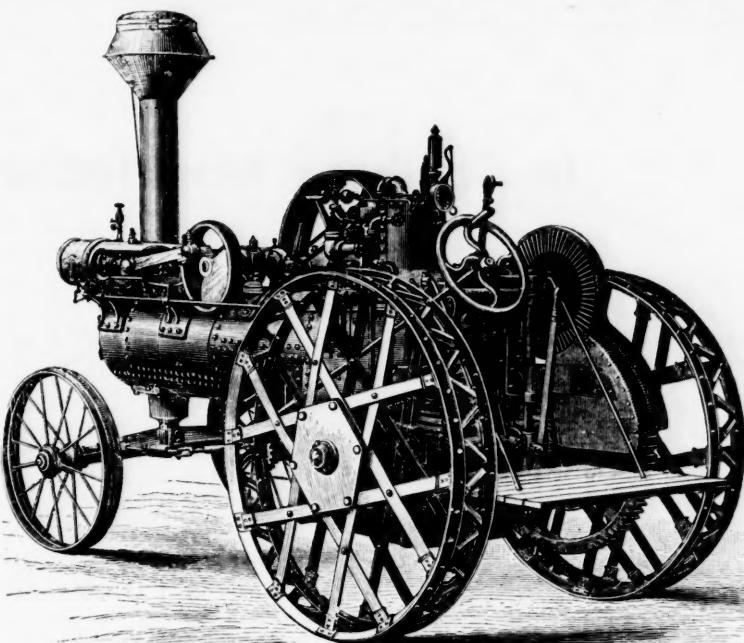
The Cuthbert, Ga. cotton factory is to be improved by the addition of new machinery.

Within eighteen months 650 miles of railroad have been under construction in Mississippi, over \$20 million being invested. During the fifteen years previous only seventy-nine miles of road were built.

Newport's News is to be lighted by electricity, and the building in which it is to be generated is nearing completion.

Cooke & Co., 22 Cortlandt street, New York, have just published an illustrated catalogue of machinery and supplies, containing 464 pages, bound in cloth. The volume, while not cumbersome, represents a good assortment of shop tool machines and supplies, including engines and boilers. It is indexed so as to be handy for reference. The latest improved tools are shown by cuts. Accompanying the catalogue is a full price list (178 pages) which is also suitably indexed.

President Jewett, of the Erie Railroad, has wisely decided to try and stop the killing of so many brakemen by the present system of coupling cars, and has given an order for a patent coupler for all the cars on his line.

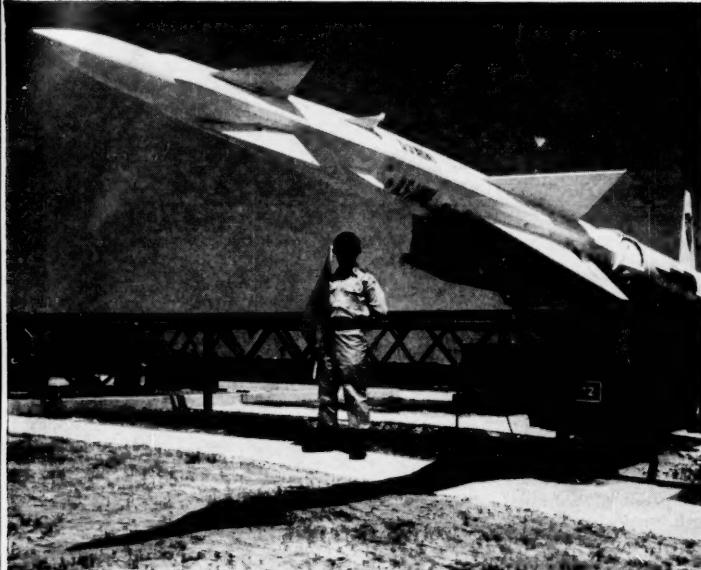


THE TRACTION ENGINE

The novelty Saw Mill is the only mill in the world built on truck wheels, and is gotten up on entirely different principles from any other. The cutting is done with the under side of the saw and with the grain of the wood instead of against the grain as in all other mills, thus saving largely in power required to drive the saw; they are gotten up expressly for light power and are warranted to run with from one-fourth to one-third less than any mill built; a ten-horse engine gives excellent power for them, and will handle the heaviest timber to the best advantage. They can be set up ready for operation while the steam is

being raised on the engine; and they will pay the owner on small jobs, owing to their portability, that will not pay on any other mill. They make excellent lumber; are easily managed, and with our Ten-Horse Traction or Portable Engine will cut from 3,000 to 5,000 ft. of lumber per day, according to the size of the logs and skill of the operator.

WM. R. EMERSON, 6 and 8 N. Liberty St., Baltimore, Gen'l Agt. for States of Pennsylvania, Maryland, Delaware, Virginia, West Virginia and North Carolina. Agents wanted in every county not already taken. Send for Circulars and Prices.



A lone soldier stands ready as a Nike guided missile begins its move to a vertical firing position during a demonstration at Lorton, Virginia.

AIRCRAFT AND MISSILE INDUSTRY ZOOMS HIGH

In Southern Manufacturing Sky

ATLANTA. The land of cotton is now the land of jet-propelled aircraft, rockets and supersonic missiles. Events of recent weeks have emphasized this significant fact.

In rapid succession have come a series of announcements indicating that the South is now the center of some of the nation's most advanced aeronautical programs. Heading these reports is the revelation that the earth's first artificial satellite will be launched from a southern base next year.

Meanwhile, throughout the South development groups are busy with such projects as the intercontinental guided missile and the first nuclear energy propelled aircraft. Both in research and production the South is coming to be an area of intensive aeronautical activity.

Already the region has gained more than one hundred impressive plants for the manufacture of aircraft, missiles, and components. Even more important, the South in recent years has gained several of the nation's key aeronautical research installations.

With this established nucleus plus a variety of favorable plant location fac-

tors the South seems destined to become the nation's top region for aircraft development. Evidence of rapid progress can be seen from Maryland to Texas.

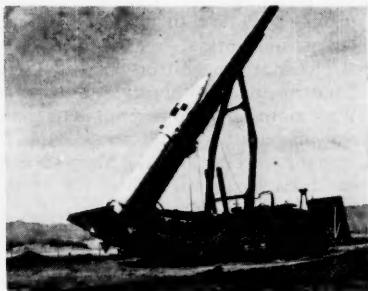
Today Texas probably ranks as the South's number one aircraft-producing state with heavy concentrations around Fort Worth. In fact the Fort Worth-Dallas area is said to rank second only to the Los Angeles area in aircraft manufacture.

Key facilities include the huge Convair plant where the B-36 was built; the Bell helicopter plant; the Chance Vought unit which produces jet fighters for the Navy; and Temco, a major fabricator of aircraft assemblies.

Last month Menasco Manufacturing Company opened a plant in Fort Worth

Huntsville scientist, Werner Von Braun is probably the foremost missile authority in the World today. Coming here from Germany at the end of World War II, he says: "My family and I have enjoyed living in the region, and we have found much to recommend it from the standpoint of scenery, historical interest, and a hospitable population."





The first panel picture shows the Martin Matador shortly after take-off at the Cape Canaveral launching site, the second shot pictures an "Honest John" rocket ready for take-off, and the third features Army personnel preparing to raise a Nike guided missile to its vertical firing position, at the launching site, Lorton, Virginia.

for the production of aircraft landing gears and fuel tanks for missiles. In addition there are a number of subcontractors and component producers in the area.

Altogether, the aircraft industry in the Fort Worth-Dallas area employs more than 41,500 workers with an annual payroll of some \$200 million. The plants have a combined floor area of more than 200 acres.

The Convair plant is now busy developing the B-58 supersonic bomber. The facility also occupies a key spot in the development of the world's first nuclear powered aircraft.

Bell Aircraft located its new \$13 million plant in Fort Worth in 1951 and now employs some 4,000 workers. According to Bell official Jackson Butterbaugh, "Last year marked the most prosperous period yet for the company's helicopter activities. A major portion of the credit for this rise is given to the

division's new location."

Bell's Texas plant has produced some 1200 helicopters during the past five years. During one recent month the Texas plant set a record by building and delivering 20 commercial helicopters to customers in five different countries.

Chance Vought in Dallas manufactures the Navy's F8U-1 Crusader jet fighter as well as the Regulus missile designed for launching from a carrier deck. The Dallas plant also manufactures fuselage sections for the North American F-100 fighter, tail sections for the Lockheed Neptune; and nose sections for the Boeing B-47 bomber.

Temco Aircraft in Dallas has been engaged primarily in the manufacture of components. However, the company has recently designed a new primary jet trainer. The experimental model made its first flight in March.

Temco has also developed an aerial drone system which enables pilotless planes to perform dangerous reconnaissance missions. The remote control planes are equipped with photographic and television equipment which can be used to survey installations behind enemy lines.



"Corporal Guided Missile," with service personnel in crane platform.



The British Government recently agreed to allow the U.S. to fire guided missiles from Florida, over British possessions to the Ascension Island, 5,000 miles in the South Atlantic. The route is dotted with eight lookout stations.

President Robert McCulloch said Temco developed the autopilot for remote control of six L-17 drones which Temco is delivering, along with three ground control stations, to Signal Corps laboratories.

McCulloch said the drones will be used by the Signal Corps as test vehicles for evaluating the performance of photographic and television cameras in drone surveillance missions.

Temco engineers, he said, developed the autopilot from preliminary design to first flight in less than six months. While its function is similar to certain complete missile control systems, it is much more simple in design.

Signals which actuate the autopilot are coded and transmitted from a 250-pound Temco-developed ground station. This unit is weather and shock resistant and may be transported in a jeep.

McCulloch said four drone aircraft



The Navy Viking rocket, one of the Nation's leading research missiles, is made by Martin Aircraft at Baltimore.

AIRCRAFT INDUSTRY

and two ground control stations already have been delivered to Signal Corps laboratories at Fort Monmouth, N. J., and Fort Huachuca, Arizona.

Florida has made fast progress in the aircraft and missile field in recent years. And indications are that the State is in for even faster growth in the immediate future.

Howard Hughes has indicated that he will locate a major plant in the southern part of the state on a 30-acre site. According to reports, Hughes will establish a new division to build jet passenger airliners in competition with Boeing and Lockheed.

While there are not yet any large scale aircraft operations in southern Florida, there are a large number of small units. In fact, there are probably a greater variety of activities in this area than elsewhere in the South.

Moreover, there are important aeronautical operations nearby in the state. Fairchild Aircraft last year located a major plant at St. Augustine.

Just a few weeks ago, United Aircraft located an engineering facility in St. Petersburg. Commenting on the move Erle Martin, general manager of the Hamilton Standard Division, said, "Florida's favorable business climate and growth potential was an important consideration . . . We were further attracted by the recreational facilities."

From the viewpoint of plant location, however, the most significant aspect of the South's aeronautical expansion has been its wide distribution. Large and important units are scattered throughout the region.

In fact, the nation's industrial dispersal program is an important factor in this growth. Not only does the South offer an unlimited number of sites far removed from critical target areas, but the South offers relative security against enemy attack.

Assuming that Soviet bombers or intercontinental missiles would be directed across the North Pole to industrial targets in the United States, the South is the safest area. There would be more time to identify and intercept enemy planes attacking southern areas than those aimed at northern targets.

Thus, Lockheed Aircraft has located two major facilities in Georgia. Oldest and biggest of these is the manufacturing plant at Marietta, Georgia.

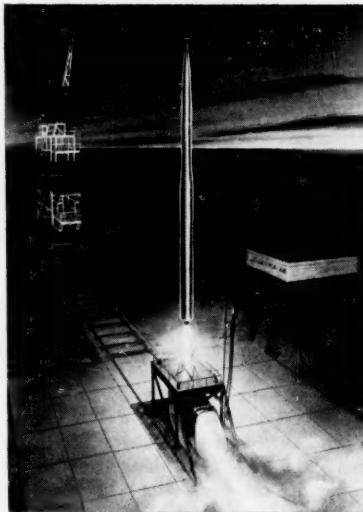
Lockheed's Marietta plant employs some 19,000 workers and last year had a payroll exceeding \$90 million. The unit is one of the largest industrial

plants in the South and is easily the largest in Georgia.

The Marietta unit produces B-47 jet bombers and C-130 prop-jet transports. With more than 100 acres of floor space and an additional 100 acres of paved outdoor working area the Marietta unit has been frequently called one of the finest plants in the world.

A few weeks ago Lockheed purchased a site near Dawsonville, Georgia, for the construction of a \$50 to \$100 million facility for development of nuclear-powered aircraft. Some 10,000 acres were acquired for the research and development center which will tackle such problems as radiation shielding.

During this summer Lockheed will transfer its nuclear aircraft design group from California to Georgia. At the same time the company is building



Artist's conception of the Navy Martin Vanguard research vehicle which will place the world's first man-made satellite in its orbit around the earth. The vehicle will be launched from Air Force Missile Test Center, Cocoa, Florida.

a \$7.5 million engineering office and lab unit at Marietta.

Among other big names in the aircraft industry now to be found in the South is Douglas Aircraft which is now operating both in Oklahoma and in North Carolina. In Tulsa, Douglas manufactures the C-132 cargo transport plane as well as B-47 bombers. More recently Douglas located a missile unit at Charlotte.

Maryland boasts several of the nation's oldest and best known aircraft manufacturing facilities as well as a variety of newcomers. Glenn L. Martin

is located at Middle River near Baltimore, and Fairchild is situated at Hagerstown. During the past year Flight Refueling located at Baltimore.

From headquarters in Hagerstown, Fairchild operates plants at St. Augustine, Florida and Shawnee, Oklahoma. The company also did pioneering work in the early phases of development of nuclear-powered aircraft with a special unit at Oak Ridge.

Today the company manufactures the C-123 flying boxcar, the Lark guided missile and the J-44 jet engine.

In Birmingham, Hayes Aircraft operates a major modification center. The Birmingham plant employs some 6,000 workers on a site adjacent to the Birmingham Municipal Airport.

In addition to the more glamorous aircraft products such as jet fighters and missiles, southern manufacturers are also busy producing a variety of the accessories and equipment required both on the ground and in the air.

Typical of such firms is Dixie Tally-ho, Inc., at Fairburn, Georgia which manufactures a hydraulic device for removing tires from large airplanes. This company also makes jet engine dollies and various types of scaffolds, slings, jigs, and fixtures used in aircraft.

According to President Alfred T. Pitman, "The outlook for the South seems to be bright—manufacturers like ourselves are finding that the climate is ideal for all year production."

Closely related to the aircraft program in the South is the fast expansion of the electronics industry. (See MR April 1956). Many plants like that of Bendix Aviation in Charlotte are expanding rapidly to produce airborne electronics equipment needed by the mushrooming aircraft industry.

Moreover, there is a parallel growth in such supporting industries as engine overhaul and repair. For example, Aerodex, Inc. in Miami has expanded from 10,000 square feet to 89,700 square feet during the past four years. Employment has increased from 25 to more than 800 workers.

In addition, several southern manufacturers have expanded to meet the growing need for private and executive aircraft. Outstanding among these is Aero Design and Engineering Company of Bethany, Oklahoma. The Aero Commander is a six-passenger airplane with a speed of about 250 miles an hour which is finding wide use among business executives. In fact, such a plane

AIRCRAFT

was chosen for transporting President Eisenhower on short trips, particularly between Washington and his farm at Gettysburg.

Aircraft Research Centers

One of the most significant developments in the South in recent times has been the location of a number of key aeronautical research centers in the region. These include several bases for the nation's most advanced work in the guided missile field.

At Patrick Air Force Base near Melbourne, Florida is situated the main base and launching facilities for the long-range proving ground for guided missiles. This test range now extends through the Bahama Islands past Puerto Rico and across the South Atlantic to Ascension Island.

It was at this base that the first horizontal launching of a V-2 missile was made. Moreover, the Florida base will be the scene of the launching of the earth's first satellite next year. This is the much heralded project Vanguard, a part of the International Geophysical Year celebration.

Already the missile range has attracted a number of related industries and research activities to northeast Florida. Several airborne electronics plants have sprung up in the region. Northrup Aircraft employs several hundred workers in the area on a confidential missile program.

General Steel Products of Flushing, New York has indicated plans to build a unit near the missile base. It has also been reported that Aircraft Suppliers, Inc., will build a branch plant in the area.

Another major research and development center is located at Redstone Arsenal near Huntsville, Alabama. Originally staffed by a nucleus of German rocket scientists brought in after World War II, the Huntsville facility now includes a number of vital activities.

Last February there was activated at Redstone the Army's ballistic missile agency commanded by Major General John B. Medaris. This group has been designated by Secretary of Defense Charles B. Wilson to work toward the development of missiles with a range of approximately 1500 miles.

Total plant investment at Redstone is estimated at \$151 million. Employment includes some 7,000 civilians with an annual payroll of about \$40 million.

Commenting on the development of the Redstone base, Commander Briga-

LATE NEWS HIGHLIGHTS

PENSACOLA. American Cyanamid Company has announced plans for a \$27 million synthetic plant here. The acrylic fiber, trademarked Creslan, has been under development for nearly ten years. The new plant will employ about 335 workers when production begins in July 1958.

NEW ORLEANS. Plans for a \$20 million refinery here have been reported by John R. Tusson, President of the Chemoil Corporation, a new firm organized for this purpose. Tusson said that construction of the 20,000 barrel refinery would get underway within twelve months. The company expects to buy a site of 600 to 1,000 acres within twenty-five miles of New Orleans.

MUSKOGEE, OKLA. Callery Chemical Company will build a \$38 million high energy fuel plant here for the Navy. The chemical firm, a wholly owned subsidiary of Mine Safety Appliances Company, has been doing development work for the Navy since 1952. The new plant will be built on Government owned property near here.

MIAMI. Lehigh Portland Cement Company has revealed plans for a new \$20 million plant to be located at the edge of the Everglades seven miles west of Miami International Airport. The new unit, which will employ some two-hundred workers, is scheduled for operation late in 1957 or early in 1958.

GARLAND, TEX. TEMCO Aircraft Corporation will build a \$1 million engineering center adjacent to its plant here, President Robert McCulloch has announced. The new 100,000 sq. ft. facility will include ultra-modern laboratories, as well as administrative offices.

WASHINGTON, D. C. Two Southern universities have received loans totalling 8,000 pounds of natural uranium from the Atomic Energy Commission. The nuclear material is to be used in research and educational programs at the University of Florida in Gainesville, and at Virginia Polytechnic Institute at Blacksburg. The Florida loan is for 5,500 pounds, and the Virginia loan totals 2,500 pounds.

CHATTANOOGA. The Wheland Company here is obtaining \$6.9 million in new financing to build a highly mechanized foundry. The expansion will include additional facilities for the ordnance division. Wheland already employs about 2,000 workers in its Chattanooga plants.

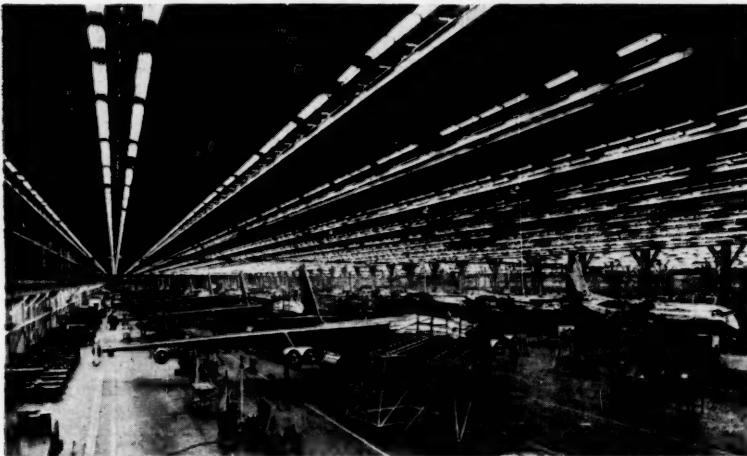
MONTGOMERY. Pan-Am Southern Corporation will build a new products terminal capable of storing more than 4.3 million gallons of gasoline, kerosene, and diesel fuel here. The installation will include an office building, loading facilities, and tank farm.

NASHVILLE. A new firm, Frontline Manufacturing Corporation, with capital authorization of \$4.5 million, has been organized here to expand the Lewisburg Casting Company at Lewisburg, Tennessee. The company is headed by L. E. Weaver, Sr., formerly a partner in the Lewisburg operations.

GAINESVILLE, GA. Warren-Featherbone Company of Three Oaks, Michigan, is moving its entire operations into a new plant here on the Southern Railway. The unit will employ approximately 250 persons in the manufacture of infant wear, with emphasis on plastic materials.

ROANOKE, VA. Appalachian Electric Power Company has announced plans for a \$20 million hydro-electric plant on the Roanoke River forty-six miles downstream from here. The 60,000 kilowatt unit will be located at Smith Mountain Gap in Pittsylvania and Bedford Counties.

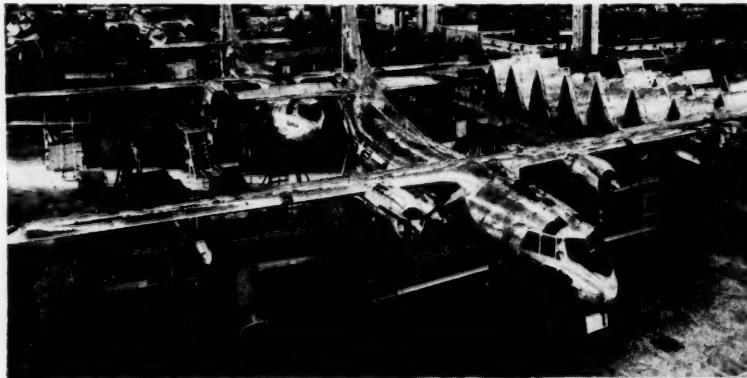
AIRCRAFT INDUSTRY



The final assembly lines at the Georgia Division of Lockheed Aircraft Corporation, Marietta, where B-47 six engine jet bombers, foreground, and C-130 four engine turbo-prop cargo airplanes are under manufacture for the United States Air Force.



Bell HSL-1 helicopters, manufactured for the U. S. Navy for anti-submarine use, are shown on three production lines at Bell's Texas Division at Fort Worth.



Pictured above are C-123's in the final stages of production at Fairchild's Hagerstown, Maryland plant.

dier General H. N. Toftoy told the Record, "Redstone Arsenal, as the nerve center for Army Ordnance's missile research and development, procurement and field service activities, will continue to play an increasingly important role in keeping our National defenses superior and up-to-date. The South, with its many industrial advantages, may be expected to carry a significant portion of the National responsibility in support of the security of our country."

Redstone has also attracted important related industries and technical activities. Thiokol Corporation employs some 850 workers at Redstone on the development of rocket propellants. Rohm and Haas also has a unit at the arsenal.

More recently American Machine and Foundry Company has announced plans for an underground manufacturing plant near Redstone at Green Mountain. This secret facility is one of the nation's first highly important defense units to be located completely underground.

The plant will be built in a solid limestone formation by Hanger-Silas Mason Company of New York. This firm has built many underground structures, including the Lincoln Tunnel.

The underground facility will provide more than one million square feet of manufacturing space. It will be connected to the Tennessee River by means of a 3600 foot canal.

Some of the Redstone operations represent expansion of army rocket activities previously carried on at Fort Bliss in Texas. Some test work is still conducted at the station near El Paso.

Still another key facility is the Air Force Engineering Development Center at Tullahoma, Tennessee. Here gigantic high speed wind tunnels have been built for testing jet engines and propulsion system components. Importance of the Tullahoma facility is indicated by the fact that many experts believe the Tennessee lab will ultimately supplant Wright Field, historic center of Air Force development work.

The first major aeronautical research facility in the country and still a vital facility is the laboratory of the National Advisory Committee for Aeronautics at Langley Field. (See MR January, 1956).

It was at Langley Field that NACA scientist John Stack and his associates first made the discoveries which enabled American aircraft to crack the sound barrier. For his work in the field of high speed aerodynamics Stack has



Navy officials say that flight tests of the new 600-mile-per-hour multi-jet seaplane, the XP6M-1 Martin Sea Master, have proved the aircraft to be "unusually promising."

received many national awards including the famed Collier trophy.

Another important facility is the Allegheny Ballistics Laboratory near Cumberland, Maryland. This unit is operated by Hercules Powder Company for the Navy and is engaged primarily in the development of rocket propellants. This base is also involved in project Vanguard—the earth satellite program. It was revealed recently that the Allegheny Laboratory will be responsible for designing the third stage rocket which will send the satellite out into space.

It was at Allegheny that Hercules designed and developed booster rockets for the Nike and Terrier guided anti-aircraft missiles. Moreover, the Maryland lab developed the rocket motor for the "Honest John" free-flight ground-to-ground artillery rocket.

Another important missile development center is operated by Sperry-Farragut Company at Bristol, Tennessee. This \$25 million unit is said to have an important part in the nation's missile production program but details of activities have not been disclosed.

Other important units include the 8,600 acre Naval rocket station and plant at Camden, Arkansas. And at McGregor, Texas, Phillips Petroleum is said to be developing the most powerful solid fuel rocket ever built.

Other Aircraft Activities

Although they cannot be classified as manufacturing or development the commercial airlines also make a major contribution to the South's aerial industry. Several lines maintain major service and repair plants in the region.

Among more important units are Pan American's overseas base in Miami and Delta C & S headquarters in

Atlanta. Additional volume results from the operation of many company and private airplanes in the region.

In addition the South includes a number of other important military air bases and development centers. The top facility for the study of the effect of climatic conditions on aircraft is located at Eglin Air Force Base in Florida.

Moreover, Kelly Air Force Base in Texas and the Navy's air base at Pensacola are the centers of pioneering aeromedical investigations. Scientists at these locations are already hard at work studying the problems of transporting human beings through interplanetary space.

Supplementing the work of Federal research groups and private industry are a number of alert and aggressive educational and research institutions



Cruising above the Maryland countryside, the U.S. Air Force's B-57B light tactical bomber, shows some of the design features which make it a "jack-of-many-trades" aircraft.

throughout the South. Many southern universities are conducting important research programs for the Air Force, Army and Navy.

The Applied Physics Laboratory at Johns Hopkins University developed the pioneering Aerobee rocket. Moreover, APL scientists have worked closely with the military services in testing the German V-2 missile and probing the conditions in the upper atmosphere.

It was revealed just recently that the APL developed the new Talos surface-to-air guided missile for the Navy.

Atlantic Research Corporation in Alexandria, Virginia has been particularly active in studying solid propellant rockets. Atlantic has a present staff of about 150 with offices and laboratories in several Alexandria buildings and maintains a 588-acre field situated 30 miles southeast of the city.

The Georgia Institute of Technology

in Atlanta has long operated an aeronautical department with wind tunnel research facilities. Georgia Tech's tunnel is now engaged in cooperative studies with Lockheed Aircraft.

At Texas A & M well-known aircraft designer Fred Weick has produced a new model specifically designed for crop dusting and other agricultural applications. Weick previously designed a pioneering private airplane, the Ercoupe, while heading the engineering staff of Engineering and Research Corporation in Maryland.

At North Carolina State College at Raleigh staff engineers have conducted studies of rocket control problems. This is only one of many basic research investigations conducted by southern universities to support the nation's aircraft development program.

Impact on Southern Economy

Federal census data is still not available to indicate in dollars and cents the scope of the South's aircraft and missile industry. However, there is no doubt that the influence of these activities on the regional economy has already been tremendous.

The aircraft industry has a high investment in plant and equipment and a high wage rate. Moreover, there is a strong tendency in the industry to develop subcontract programs and local suppliers.

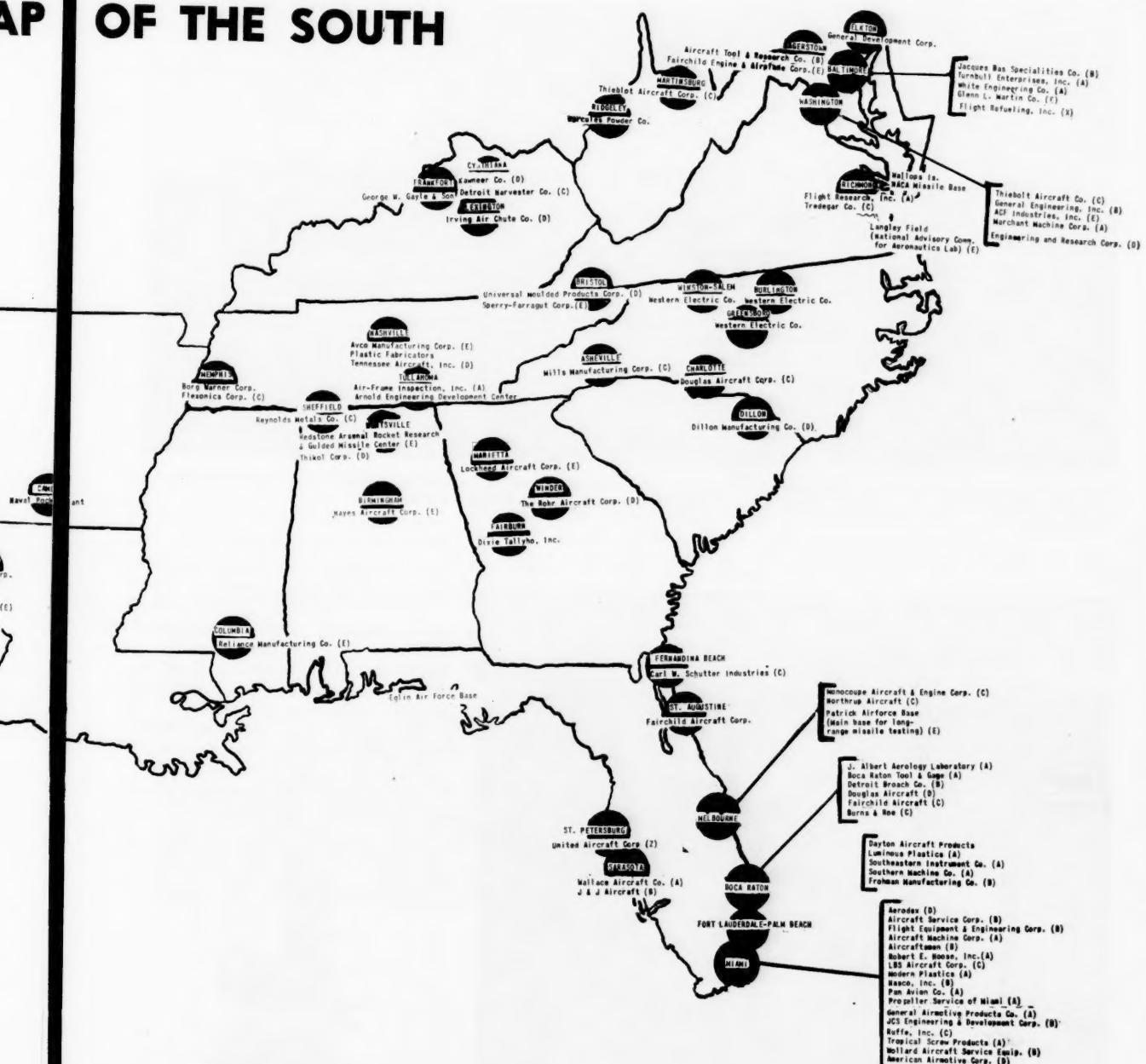
For example, Lockheed Aircraft's Marietta plant within 3 years of its establishment was doing \$44.5 million business per year with Georgia firms. Lockheed's purchasers in the southeastern states total \$77 million for 1954 and have increased substantially since then.

Some 70 percent of Lockheed's vendors are classified as small businesses. In all Lockheed's Georgia division



Sleek, bullet-like lines of the Navy-Vought F8U-1 Crusader are shown in this flight view above the clouds at the Chance Vought plant in Dallas, Texas.

MAP OF THE SOUTH



TEXAS

Brady—Hoffman Co., Intercontinental Div., aircraft and parts.
El Paso—Radioplane Co., drones and missiles.
Fort Worth—Bell Aircraft Corp., aircraft.
Fort Worth—Consolidated Vultee Aircraft, aircraft.
Fort Worth—Menasco Manufacturing Co., landing gears and missile components.
Galveston—Camair Aviation Div., airplane component parts.
Garland—Intercontinental Manufacturing Co., aircraft and parts.

Garland—Shaw and Estes, aircraft equipment and parts.

Garland—Temco Aircraft Corp., aircraft and parts.

Grand Prairie—Chance Vought Aircraft, aircraft.

Grand Prairie—Temco Aircraft Corp.

Greenville—Temco Aircraft Corp., aircraft and parts.

Marshall—Thiokol Corp., rocket propellants.

San Antonio—Howard Aero, Inc., aircraft modification.

Waco—Norris-Thermador Co., steel rocket cases.

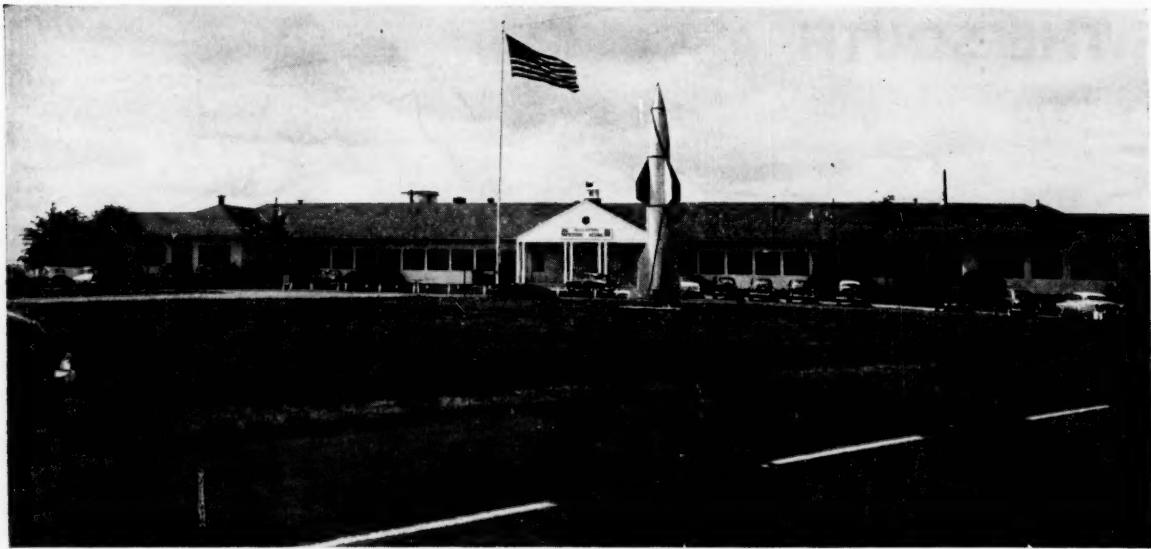
Phillips Chemical Co., rocket motors.

VIRGINIA

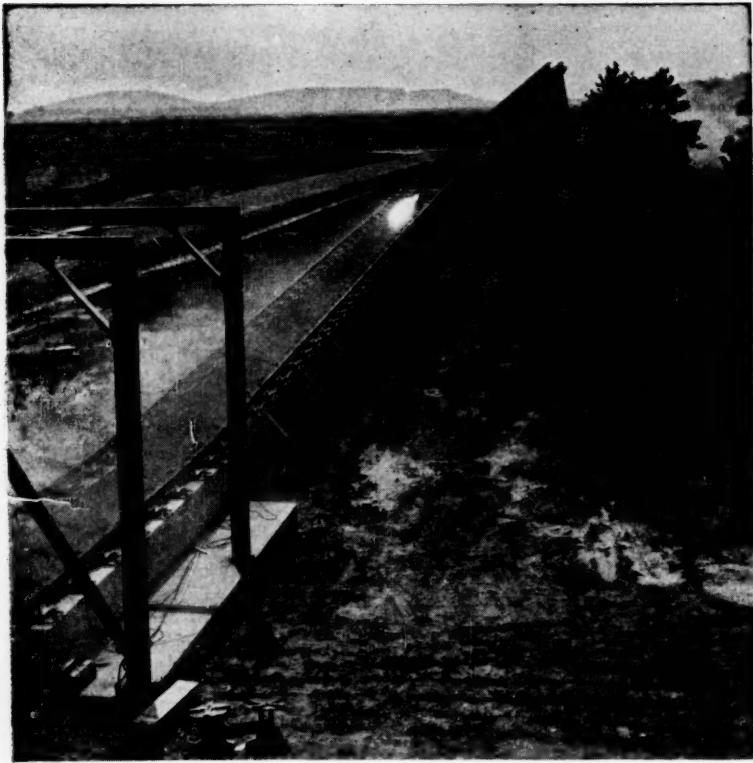
Bristol—Universal Moulded Products Corp., guided missiles, boosters, rocket launchers.
Richmond—Tredegar Co., projectiles, rockets.

WEST VIRGINIA

Martinsburg—Thiebaut Aircraft Corp., aircraft modification.
Ridgeley—Hercules Powder Co., guided missiles.



This is the headquarters of Redstone Arsenal, one of the foremost rocket research stations in the country. Within the building are housed the offices of Brigadier General H. N. Toffey, commander, along with other top military and civilian personnel.

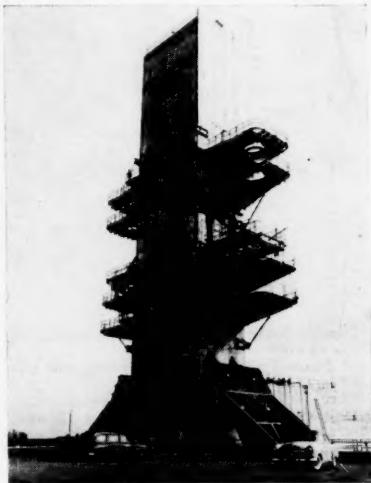


Redstone Arsenal's "Railroad in the Sky" is the name given to this ballistic track test device for the firing of aircraft rockets. One of three such facilities in the United States, the platform is 600 feet long and is inclined at a three degree angle.

made purchases from 7,485 different firms in a recent 3-year period.

Such major plants as Lockheed have often attracted smaller supporting units. For example, Rohr Aircraft, a West Coast firm, located a plant at Winder, Georgia to supply assemblies to the Lockheed unit at Marietta.

Moreover, the South's growing chemical industry has found an important market in the missile field. Both Ethyl Corporation and Shell Chemical produce rocket fuels in Louisiana.



Details regarding this "static firing test stand" located at Redstone, remain a top secret.

Moreover, the fast rise of aircraft production has meant major outlets for the region's fast-developing aluminum industry. Kaiser and Alcoa operate several plants in the South supplying metal for aircraft assemblies and missiles.

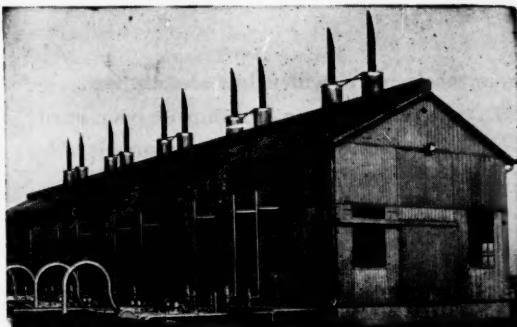
Indicative of the impact on surrounding communities is the real estate boom adjacent to the missile proving range base at Cape Canaveral, Florida. A group of developers recently bought an 8,600 acre tract west of Titusville for a commercial and housing project. This is a direct result of the proposed 4,000-man increase in the personnel of the missile base.

Today the nation's missile program totals about \$1 billion per year. But it is anticipated that expenditures will double during the next three to five years.

With a favorable climate, large labor reservoir, dispersed plant sites and an established increase of development activity, the South is sure to enjoy an important share of the new expansion.



The Aero Commander, manufactured in Oklahoma City, is a favorite with businessmen throughout the U.S. It is a relatively inexpensive plane with professional performance. President Eisenhower frequently uses this type plane for short trips.



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SOUTHERNERS AT WORK



Always one to "see for himself," TCI president, Art Wiebel, stares at idle plant from the top of a chilled blast furnace as strike mars company record and leaves him a . . .

MAN ON THE SPOT

The Birmingham steel strike, which has already cost upward of \$40 million, tends to obscure an impressive record of progress at TCI. Here's the story of the company's able and aggressive president, Art Wiebel.

BIRMINGHAM. A temporary work stoppage in recent weeks has focused the news spotlight on Tennessee Coal & Iron's sprawling steel center here. In the center of that spotlight has been TCI's dynamic president, Arthur V. Wiebel.

But regardless of the current work slowdown, the company and its capable president deserve much credit for the phenomenal rise this southern industry has experienced in recent years.

Under Wiebel's leadership, TCI has undergone a period of growth and modernization unparalleled in its long and colorful history. During his ten years with the division, he has increased its output by approximately 50 percent. Already the largest industrial organization in Alabama, TCI has not only kept stride, but in many respects has led the way in the industrial pro-

gress of the state and the region. In one of many postwar improvement programs, TCI's rated annual ingot capacity was increased by a half million net tons with major improvements and additions to finishing facilities.

Actually, there is much more to TCI's growth story than simply the addition of more production facilities to raise the capacity. During and immediately after World War II, the demand for steel was so great that plants had to be strained to the limit in order to squeeze out the last possible ounce of metal.

With nearly all of the nation's industrial production geared to war-time needs, it has been impossible to replace TCI's worn and outmoded facilities. Thus, a major job had to be done, if the division was to hold its position in the industry. Much planning, ingenuity and courage was required at that point

to launch such a tremendous project. But the youthful-looking president and his staff of skilled executives and technicians accomplished the job in record time.

Increasing production at a fully integrated steelmaking concern involves a great deal more than adding a few furnaces. Improvements and enlargements have to be made all down the line, from mines to shipping facilities for finished products. Here are a few of the major changes that have occurred at TCI since the end of the war.

The division's coal mines were mechanized, and a new mine and washer plant—among the largest and most modern in the nation—were put into operation. Iron ore mines also were mechanized, and ore blending and storage facilities were enlarged. An additional battery of ovens was built at the coke plant. A tar distillation plant was constructed, for the recovery of coal chemicals valuable in the production of solvents, plastics and the like.

At the Fairfield Steel Works, two open hearth furnaces were added, and the 10 already in use were enlarged from 180 to 220 tons capacity. This entailed augmenting auxiliary facilities, such as soaking pits.

The Fairfield Sheet Mill, which formerly produced only hot rolled sheet and strip, was almost completely rebuilt, in order to change over to the better quality cold reduced product. This is the only mill in the South presently producing cold reduced sheet steel. Three continuous galvanizing lines speed the processing of the product.

Many of the old hot dip tinning machines at the Fairfield Tin Mill were dismantled, and replaced a third continuous electrolytic tinning line.

But building plants is only half the job. The other half is building markets for the products. Wiebel is convinced that TCI's progress is tied directly to the increasing business prosperity of the 11 southern states which comprise the division's trade territory. During recent years, he and his staff have expended much time and energy in encouraging and promoting the industrialization of the region.

A key to Art Wiebel's beliefs concerning the obligation of business concerns such as TCI to foster the economic growth of the South is found in a speech he gave to a conference of the Southeastern Electrical Exchange.

"Your purpose and ours," he said,

"is to maintain and reinforce the industrial might of the South. For in so doing, we not only add to the material wealth of this section but we contribute much to those more intangible things which make up what we like to call 'the American way of life' . . . The future of the South—the future of America—is bright. We of industry can make it brighter by diligence and attention to duty. The burden is ours. If we accept it with optimism and without reservations, then the future, too, is ours."

Being president of the South's largest steel enterprise is a job which cannot be confined to a 40-hour week. What with frequent conferences and meetings with associates in the North and periodic visits throughout the division's sales territory—in addition to responsibility for the general supervision of the activities of 25,000 employees—he has very little time for personal pursuits. He has several hobbies, however, with which to fill in such spare time as he can muster.

By no means a "paper engineer," he is at his happiest when tinkering with machinery. To be sociable, and if forced by circumstances, he will golf a little, but he would much rather fish, hunt or practice amateur photography.

He plays as seriously as he works. Running a steel plant or casting for bass, he believes in providing the right



On his way down into one of TCI's coal mines, Wiebel checks on the safety program. While the division has a well-staffed organization to handle such matters, he considers employee safety one of his own major responsibilities.

equipment for the job and then using it in the most efficient manner.

Strictly speaking, Wiebel is a southerner by adoption. True, he was born in the border state of Maryland and he moved with his family to Pittsburgh in his youth. There he received his senior high school and college training, and built the foundation of his business career.

In the decade since Wiebel came to the Birmingham district, however, he has been an enthusiastic booster of the South. And native business and social acquaintances have long since dubbed him an "honorary southerner."

Born in Cumberland, Maryland, Wiebel received his elementary education at public schools of that community. He finished high school at Schenley High, in Pittsburgh, and then enrolled at Carnegie Institute of Technology. His college education was financed by teaching mathematics at the college and by scholarships which were granted during his sophomore, junior and senior years.

He graduated second in his class, receiving a B.S. degree in Mechanical Engineering. However, he remained at Carnegie Institute for three more years, continuing to instruct in mathematics at night school. He also did postgraduate work in advanced mathematics, mechanics and physics.

The academic life, however, was too confining for a man of his energetic nature. He left the classroom in 1928, to take an engineering job with Koppers Construction Company. After three years, he was promoted to operating engineer for Koppers Seaboard Coke Company, at Kearny, N. J.

Wiebel was employed by United States Steel in July, 1933, as an estimator in the Engineering Department of the former Carnegie-Illinois Steel Corporation. Later, he was made special engineer in Carnegie-Illinois' Pittsburgh district, and shortly thereafter moved up to the position of assistant chief engineer of the corporation's Homestead Works. In 1940, he became chief engineer of the Pittsburgh district. Within the same year, he was made assistant to the vice president in charge of engineering and operations of the United States Steel Corporation of Delaware. Thus, in only seven years, he moved from a drafting board to a high executive office.

It has been said—and rightly so—that Art Wiebel is a man of many talents. A look at the record reveals he is master of each.



Publisher Gaylord's Climb To Success Began in Rowdy Oklahoma City in 1902

OKLAHOMA CITY. E. K. Gaylord is an Oklahoma City newspaper publisher who is probably the most powerful and influential citizen in the state of Oklahoma.

In Gaylord's story is reflected the growth of Oklahoma City and Oklahoma. It is also the story of a small country newspaper built into two of the southwest's most powerful metropolitan dailies, one of the nation's leading farm journals, and a powerful radio and TV station.

At present, Gaylord is president of the Oklahoma Publishing Company and publisher of the *Daily Oklahoman*, a morning newspaper, and the *Oklahoma City Times*, an afternoon paper. Also on the list of Gaylord enterprises are the *Farmer Stockman Farm Journal*, radio and television stations, WKY and WKY-TV, and a statewide motor freight service, Mistletoe Express.

As president of the Southern Newspaper Publishers Association in 1943 he was instrumental in promoting the construction of a southern newsprint mill in East Texas. The mill went into operation several years later and insured southern publishers a supply of newsprint. A decade later he took an

active part in the building of a second mill near Birmingham, Alabama, in spite of arguments by Northern paper producers that suitable newsprint could never be manufactured from Southern pine.

When Gaylord was a Junior in college, he was offered a chance to buy controlling interest in the *Colorado Springs Telegraph* with an older brother. Although Gaylord lacked the required \$6,000, he found a banker in Springfield who offered to back him in his business venture.

Gaylord had his feet wet now, but it still didn't mean a start in the newspaper career of the future Oklahoma City publisher. Instead he became a deputy district clerk and studied law at night. Later he was sent to Cripple Creek as chief deputy court clerk of a newly formed county. Eventually though, he was back in Colorado Springs to join his brother in operation of the *Telegraph*.

The Colorado Springs paper later was sold, and Gaylord was attracted to the Oklahoma territory by a glowing account he read in a newspaper while visiting in New York. When Gaylord arrived in Oklahoma City in December,

1902, he found it a rough and raw frontier town. But the merchants and businessmen were as young and as vigorous as their baby city.

This town was a challenge to Gaylord and he found it to his liking. The man who was to later transplant the state capitol from Guthrie to Oklahoma City and force legislation to remove unsightly railroad tracks from the center of Oklahoma City, along with scoring a news scoop over the rest of the nation had "arrived" at last.

In 1902, the *Daily Oklahoman* was a struggling 8 year old publication and the publisher was looking for a new investor and business manager. A little more than one month later, after he and two associates had purchased 45 per cent of the owner's stock, Gaylord was settling down into the job of building a newspaper, a city, and a state.

Shortly after entering into this business venture, Gaylord began to inject new life into the paper. He was instrumental in housing the *Daily Oklahoman* in a new brick building and buying a new 16 page, two deck press. Printers were often amazed when they were called off printing commercial jobs to publish "extras." These "extras" gained quite a reputation for what had been to this point only a so-so publication. After the double-deck press was installed, the paper couldn't be touched by any other publication between Kansas City and Dallas. The *Oklahoman* was dubbed the "Redheaded Daily," because of its practice of putting the headlines in red ink.

Only one year after Gaylord arrived in Oklahoma City he scored the news-beat of the year. On a hunch, he employed the Associated Press Telegraph operator to remain on duty over Sunday when the paper did not ordinarily publish. With an eye on the Far East, where tension was mounting daily, he expected that real trouble was brewing.

On that Sunday afternoon, the Russo-Japanese war broke out along with the disastrous Baltimore waterfront fire. The *Oklahoman* flooded Guthrie, then the capital of Oklahoma territory, and Wichita, Kansas, with "extras." In addition to trebling the ordinary press run for Oklahoma City, the paper gained a reputation and gave evidence of its upward climb.

The newspaper plant was wiped out in a fire in 1909, but before the wreckage cooled, new linotype machines and parts for the damaged press were ordered from manufacturers, and ar-

SOUTHERNERS AT WORK

rangements completed for work to begin immediately on a new building.

In 1916, the *Oklahoman* bought its Republican rival, the *Oklahoma City Times* at a sheriff's auction, and the publishers announced that from then on both papers would be "democratically independent" and neither would serve any political party. In 1939 when the *Oklahoma News*, Gaylord's only rival in the city publication field, suspended operations, Scripps-Howard officials admitted that the *News* had operated in the red most of the 33 years that it had competed with the *Oklahoman* and the *Times*.

One of Gaylord's most important election battles was won in the fight to bring the state capitol to Oklahoma City from Guthrie, the old territorial capital. He served as a member of a citizen's advisory committee on the construction of the new statehouse. The capitol was built for \$1,600,000 and it was much more spacious than the capitols of New York and Pennsylvania, both of which cost considerably more.

With talk of opening an oilfield in Oklahoma City prominent in the minds of natives in 1928, Gaylord took a step that was then considered both fool-

hardy and financially unsound. He bought radio station WKY at a time when every newspaper-owned radio station in the country was losing money. Gaylord had anticipated losing \$100,000 during its first year of operation, but instead the total loss amounted to only \$60,000. Two years later the station was back in the black and has continued to operate that way ever since.

In the depths of the depression of the 1930's, the railroads dealt the Gaylord papers a crippling blow when they removed several of the faster Oklahoma trains as an economy move. Instead of folding up, like a lesser publisher might have done, he established the Mistletoe Express to deliver his newspapers. Today, Mistletoe Express has expanded to the point where it carries far more commercial freight than it does newspapers.

One of the prolonged campaigns waged by the publisher has been for an adequate water supply for Oklahoma City. Two lakes have been built and recently, newspaper-prodded voters provided money for the start of an ultimate \$100,000,000 project to tap abundant water supplies in southeast Oklahoma.



Curt Siegelin

Governor Long Appoints Siegelin To Top Post

Curt Siegelin of Bogalusa, Louisiana's "Mayor of the Year" in 1955, has been named executive director of the state's Department of Commerce and Industry by Governor Earl K. Long. The department is Louisiana's official travel and industrial promotion agency.

Siegelin, elected mayor of Bogalusa for his third consecutive term in 1954, resigned his post this month to become Commerce and Industry head. He replaces Elmer D. Conner of Jennings, who resigned last month.

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Spencer Love, Chairman of the Board, Burlington Industries.

GREENSBORO, N. C. In one of his recent monthly briefing sessions with his top personnel, Spencer Love, Chairman of the Board of Burlington Industries, was discussing a possible acquisition of a new company. When one of the assembled manufacturing executives raised a question as to possibility of government anti-monopoly investigation of the proposed transaction, the soft-spoken textile executive said, "Well, if they are going to investigate, let's give them something BIG to investigate."

This offers a clue to the personality of the man who heads the world's leading textile operation—he is never satisfied with half measures. If it's to be a gamble, let it be a big one.

Yet despite his affinity for success in everything he undertakes, Spencer Love is far removed from the average concept of the big business tycoon. Modest almost to a fault, he shuns the public

SOUTHERNERS AT WORK

Soft-Spoken Spencer Love Is The South's Quietest Tycoon

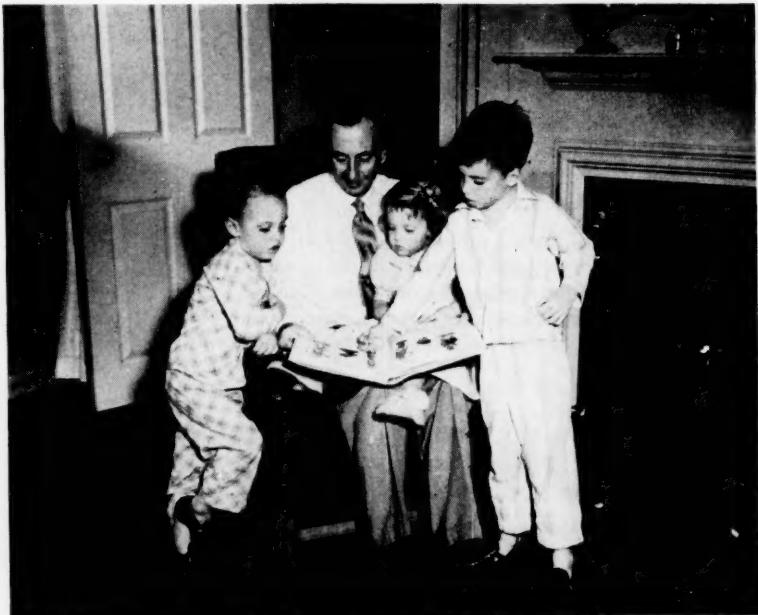
"Well, if they are going to investigate, let's give them something BIG to investigate."

eye. When asked for information about himself, he has been known to refer his questioner to a sketch published last year in "American Fabrics," an elaborate textile magazine widely read in the trade.

"If you ever hear that Joshua Logan or Lindsey and Crouse are putting on a play about big business," the sketch reads, "make up your mind right now that no one even remotely resembling J. Spencer Love will be cast for the part of Chairman of the Board of a multi-million dollar corporation. Everything

about his appearance and manner belies the storybook concept of the captain of industry. He never says anything with an eye toward the press; is never in the limelight. If you expect outward and visible signs of the dynamic character within, you will be completely disappointed. The head of Burlington Industries is not only modest and self-effacing, but downright diffident and shy. And it isn't an act either; it's the man himself."

That introduction is probably as accurate an estimate of the Greensboro,



Love finds his greatest enjoyment in relaxing with his eight children. Shown in this picture are, left to right, Martin, June Spencer, and Charles.

SOUTHERNERS AT WORK

North Carolina, textile leader as can be found anywhere.

Tall, lean and amazingly youthful in appearance, Spencer Love today heads up the world's largest textile organization, a concern which he himself was instrumental in starting from the most modest of beginnings 33 years ago.

His story is neither the well-known Horatio Alger type of narrative nor is it that of one who came into the world with a silver spoon in his mouth. It is rather the story of a man possessed of amazing drive, boundless energy, and an almost visionary idea of where he is going and what he wants to achieve. This visionary quality led him to see the limitless possibilities in rayon, a then untried fiber, back in 1923, and to pioneer in its development. It has continued to lead him along the paths of growth and expansion, always with the idea of producing the very best fabrics that could be manufactured to suit the needs of the average Americans who want smart, high quality clothes at modest prices.

From a modest beginning of one small plant and 200 employees back in 1923, Spencer Love's Burlington Industries has today grown to be a tremendously diversified operation that includes 98 manufacturing plants in 13 southeastern states and four foreign countries, employing 46,000 persons and producing goods at a rate of more than half a billion dollars annually.

Its production includes practically every known textile product from every known textile fiber. It extends even to plastics, and through Burlington's latest acquisition—Hess Goldsmith and Company—to glass fibers. It includes hosiery, ribbons, automotive and industrial fabrics, woolens and worsteds, and cotton piece goods and yarns, in addition to all types of men's and women's

apparel fabrics, both outerwear and underwear.

Despite the fact that he was actually born in Cambridge, Massachusetts, Love considers himself entirely Southern in his background and upbringing. His father, James Lee Love, a Tar Heel born, was teaching mathematics at Harvard when James Spencer entered the world July 6, 1896 at Cambridge, Massachusetts. He regards Cambridge, however, as merely a place which figured briefly in his life. He is primarily a North Carolinian whose grandfather and great uncle had been textile men before him, in the 1870's, in the Piedmont section of the Carolinas.

Typically, he completed Cambridge in three years and spent what would have been his senior year at Harvard's Business School.

Along with other classes of 1917 he joined the armed forces, and with his university training promptly found his niche in the complicated work of his division's adjutant general.

Seemingly having acquired the success habit early in the game, Love was one of the youngest majors in World War I's AEF, emerging with the rank of major at the age of 23. He acquired a personal citation from General John J. Pershing for "exceptionally meritorious service."

He returned to Cambridge after the war but was not to finish his work at the Harvard Business School since, as he later wrote, the excitement of army life and overseas experience had made him unwilling to settle back into student life.

Despite his splendid war record, his impeccable Harvard education, and Pershing's citation, he was not swamped with job offers. After wearing out a good bit of shoe leather in Boston he realized there was an overabundance of

young men looking for jobs in the land of beans and culture. So he turned toward North Carolina, and took a job in a cotton spinning mill in his father's home town of Gastonia, N. C.

Not one to remain long a subordinate, Love induced his father to join with him in financing a textile operation of their own. With savings of \$3,000 he managed to raise \$80,000 as a down payment by borrowing from a bank, and a commission house and soon was the new owner of the Gastonia Cotton Manufacturing Company, with control purchased for \$250,000 payable over five years. The mill earned half the purchase price the first year, and the next, despite a sudden price drop, saw Mr. Love's second demonstration of financial agility—he sold his mill real estate for \$200,000, retaining the machinery which he moved to Burlington as the foundation of a vast new textile organization.

Thus in 1923 Burlington Industries was born in a North Carolina cornfield near the site of the first battle of the American Revolution. The story of Love's career since then is almost so well known as to forbid retelling.

Only 200 employees were on hand that first year. In 1924, the young company used 106 pounds of rayon, and ten years later Burlington had become the largest weaver of rayon fabrics in the United States. Working with the untried chemical fiber, rayon, Love and the men around him had seen the possibilities of this man-made fiber which was not subject to the whims of nature for controlling its price, supply and demand. The new organization had thus started its career on what seemed to be a gigantic gamble. And at first it appeared to be a melancholy fiasco. The first products were bedspreads. And although they were seamed down the

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SOUTHERNERS AT WORK

middle, sleazy and otherwise not much to look at, still they were cheap in a time when cheapness was far more important than beauty.

Seemingly having gambled on the right fiber, Burlington began to expand. And with its expansion was born the legend of the "wooden walls" which has characterized the company throughout its history. In those early days before scientific engineering had determined that a textile mill has an optimum size, Love and his associates never knew when a plant would stop growing. So, following what was then sound construction practice, each brick plant was built with a temporary wooden end wall which could easily be ripped out if the mill required enlarging.

Depression struck, but during the dark years of the early thirties, there was no pause for the growing company. Instead, Burlington raised the wages of its 4,000 employees by 15 percent and turned out 60 million yards of fabrics in 1933.

In 1935, when many older mills were closing, Burlington continued buying, refitting and opening these plants. It also opened a New York company to handle its selling. In 1937 the company made its first public offer of stock through the New York Stock Exchange and became officially of age as a national institution.

Expansion continued, with the company entering the hosiery field in 1938, and branching out into foreign operations in the early 40's.

During the war the firm produced more than fifty items for the Armed Forces, and Spencer Love was called to Washington to serve the War Production as chief of its Textile, Clothing and Leather Bureau.

Thus from its pioneering start with rayon back in the 20's, Burlington has become the undisputed leader in the field, not only in synthetics but in all textiles. One contributing factor has been that Burlington continually paced the field in search for and development of new fabrics, new finishes, new applications of man-made fibers to the needs of the consumer public. Today Burlington is annually spending from four to five million dollars on its top priority program of research, development and experimental work. This program parallels and complements its broad manufacturing output which in a year's time will normally include the production of several thousand styles in perhaps as many as one hundred thousand different colors and patterns.



Love, third from left, manages to keep in close touch with operations throughout the far-flung Burlington organization. Here on a visit to the Decorative Fabrics Finishing Plant he chats with left to right, Marvin Cranford, Manufacturing Manager of Decorative Fabrics, J. C. Cowan, Jr., Vice Chairman of the Board, and John Boland, Division Manager of Decorative Fabrics.

Another distinguishing Burlington characteristic has been diversification of product. Not content with putting all their yards into one filament, the company long ago branched out from rayon into experimentation with and manufacture of fabrics from all the other man-made fibers as they emerged from the chemists' test tubes, together with cotton and woolen fabrics. Today from Burlington looms come fabrics of Nylon, Orlon, Dacron, Dynel, Vicara, Acrilan and glass fibers, as well as numberless blends of all these with the natural fibers of cotton, wool and silk.

Along with diversification, the Burlington organization today is also decentralized, with an organizational structure composed of 13 member companies. Nearly everyone of these is headed by an executive who is responsible for that entire manufacturing and merchandising area. The growth in diversification, in the past three years particularly, has been almost fantastic, including the acquisition of Peerless Woolen Mills, the woolen and worsted operations of Pacific Mills, Ely & Walker Dry Goods Company, Hess-Goldsmith fiber glass operations, and several others.

How do you bring about this sort of accomplishment in such a relatively short time? Obviously it takes a prodigious amount of drive and determination,

which includes an eleven-to-twelve-hour work day on the part of Mr. Love.

With his principal base of operations in Greensboro, he divides his time between his offices there, his New York office, and — in winter — his home in Palm Beach, Florida. A fleet of five company airplanes provides the kind of rapid and flexible transportation system that he and other top Burlington executives need to keep in closest touch with all their far-flung operations.

Although Love does not necessarily eat, live and breathe his business, still much of what he does or thinks about seems to stem from it. He has his quota of extra-curricular hobbies. On the tennis court, where he finds his favorite form of recreation and relaxation, he is able to whip many a younger competitor of near-championship quality.

Keen Family Interest

Outside the vast scope of his business and official interests, Spencer Love lives for one thing: His family. It is nothing for him to get to work as early as 7:30 in the morning in order to find time for the children (he has six sons and two daughters) later in the day. In conversation, when the subject of his children arises, his face lights up, his eyes twinkle and, in the great tradition of fathers, he is off.

To add to his filial pride, he only in

SOUTHERNERS

recent weeks became a grandfather for the first time.

Yet despite widely demanding business and family interests, Love has maintained an active interest in economic and education affairs. Among many other activities he is a member of the Business Advisory Council of the United States Department of Commerce and a trustee of the Committee on Economic Development. He is a former member of the Anglo-American Productivity Council of the Economic Co-operation Administration and as previously mentioned served as director of the Bureau of Textiles, Leather and Clothing of the War Production Board during World War II. He is a trustee of the University of North Carolina and of Davidson College, a member of the visiting committee of North Carolina State College and of Harvard Graduate School of Business Administration and served as vice-president of the Harvard Alumni Association in 1950-51. He is currently serving as vice chairman of the Development Council of the University of North Carolina. And in the academic world he holds honorary LL.D. degrees from the University of North Carolina and Elon College.

Textile Spokesman

As a spokesman for the textile industry, Spencer Love is without peer. In numerous appearances before congressional committees and before important trade and professional groups he has spoken out forthrightly in behalf of the best interests of the textile industry, and his voice carries weight wherever textile interests are concerned. He is also quick to point out the enormous strides that have been made in the past twenty-five years in his industry. His plants and operations amply carry out his contentions along that line. They are shining examples of modern day textile operations that provide the most efficient, modern equipment available, the best working conditions possible, and wages and benefits equal to those in any other comparable industry. Another of his strong convictions is that the textile industry offers unlimited opportunities for ambitious young men who are willing to work hard. And of this conviction he himself is the best living proof.

He is filled with an intense and burning conviction that he is as right as rain in the good fight for a better America as well as a better Burlington.



GOING UP!

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PROTOTYPE OF THE EXECUTIVE TYPE

"If you want to get things done, ask a busy man to do them."

By CHARLES LAYNG



ORLANDO, FLA. If the somewhat ambiguous term "executive type" means a man who gets things done in an industry that is so new that there's no precedent for anything, then Holman R. Cloud of the Minute Maid Corporation is of the executive type. He is also—with the tremendous scope of his activities—a prime example of the truism that, if you want to get things done, ask a busy man to do them.

As vice president in charge of operations for a company whose sales jumped from less than three million to 106½ million just a decade later, he has, with the young and talented president of Minute Maid, John M. Fox, formed a perfect team for the development of a completely new industry—citrus concentrates.

Starting with a small plant in Plymouth, Florida, with a mere handful of employees, he has had the gargantuan task of co-ordinating the corporation's growth, in ten years, to a huge operation with over 4,000 employees and an annual payroll of \$7,400,000. The original small plant has been enlarged to many times its original size and five other huge concentrate plants have been added in Florida to bring the total capacity of all Florida plants of Minute Maid to 8,200 gallons of frozen citrus concentrates per hour.

Nor is this all by any means. Minute Maid's Florida empire includes a vegetable plant, two fresh fruit packing

houses and two fertilizer plants. The vast property also comprises some 16,000 acres of citrus groves, either owned or leased.

The rolling stock necessary for the Florida operations consists of a fleet of 1,414 vehicles, including 162 tractors and 296 trailers; 367 passenger cars; 242 field trucks and "goats" for use in the groves; 99 farm tractors and 69 pick-up trucks. There are also refrigerated vans, dump trucks, tankers, sprayers, dusters, grove loaders, fertilizer vehicles of various sorts, bulldozers and a wide variety of specialized equipment.

Sitting in the driver's seat of these huge operations is Holman R. Cloud, vice president and a director of the Minute Maid Corporation; vice president of the Minute Maid Groves Corporation; president of the Granada Groves Corporation; and president-treasurer of the Loma Linda Corpora-



Holman R. Cloud (L) signs up one of Minute Maid's growers.

SOUTHERNERS AT WORK

tion. He's also a director of the First National Bank at Orlando; chairman of the Futures Trading committee of the Florida Canners and Citrus Industry; a member of the Governor's advisory committee on citrus; panelist on the Florida Citrus Commission's Blue Ribbon Citrus Panel, and a member of the Labor Relations committee of the U. S. Chamber of Commerce.

He was the first concentrator to become president of the Florida Canners' Association and, also included in the organizations of which he is a recent past president are the Chamber of Commerce, the Country Club, the Rotary Club and the University Club, all of Orlando, Florida.

All of these business and civic attainments occurred after a long and distinguished career in an entirely unrelated field—that of electric power—with which Mr. Cloud was connected for more than a quarter of a century. Born in Spiceland, Indiana, he attended the University of Chicago (Commerce and Administration) and the French Technical School at Meaux, France. He served in World War I, being promoted to first lieutenant before the hostilities ceased. On his return from France, he spent a year each with the Central Indiana Power Co. and the Metropolitan Edison Co., before deciding, in 1921, that his future lay in the South and, more specifically, in Florida.

In that year, he joined the Florida Power Corporation, and, twenty-four years later, as vice-president and director of that corporation, his interest was attracted to the then infant industry of frozen citrus concentrates. His company supplied the pilot plant at Plymouth with power and he became acquainted with what was being done there.

This, Holman Cloud felt, was an industry with infinite possibilities. Moreover, it offered a tremendous challenge to a man like him, since it was such a brand-new industry that there were no precedents whatever. Everything that had to be done to bring the struggling infant into adulthood required original thinking and planning.

This was the sort of challenge that Mr. Cloud was completely unable to resist. In 1945, when Minute Maid Corporation was formed, he resigned as vice president of the Florida Power Corporation to accept the same title with the new corporation.

In the ten years since that time, there are few executives who have been presented with such a succession of prob-

lems, because the creation of the methods of operation of an entirely new industry offer infinite varieties of new challenges.

The difficulties were not long in coming, and they were severe because the background of the formation of the corporation in 1945 was a huge Army order and, just as the organization was being completed, the War was over and the cancellation of this order was imminent. However, Cloud and his limited forces managed to produce some 90,000 gallons of concentrate in their first season.

This represents just about eight hours' production now.

One of the really tremendous jobs that Cloud had to handle was the coordination of the various facilities that were soon being acquired by Minute Maid. The first of these was the citrus canning plant of the Ploeger-Abbott Co., at Leesburg, which included a cattle feed and molasses operation. This brought Minute Maid into by-product problems on a big scale and, at present, such by-products include citrus pulp pellets, citrus pulp molasses, stripper oil and cold-pressed oils. In July, 1949, another plant was leased in Davenport, Florida, and production there was under Minute Maid supervision for some five years.

It now became obvious that the corporation would need groves of its own to supply the fruit and, in December, 1949, the properties of the DiGiorgio Fruit Corp., consisting of 4,700 acres of groves, were taken over. A new subsidiary, Minute Maid Groves Corp.,

was formed to take over grove operation and another 630-acre grove was soon added.

In 1951, President Fox announced a new fruit procurement plan devised by Mr. Cloud, under which participating growers would get a guaranteed amount for their fruit, plus a percentage of any net profits that the company realized on that portion of the year's production. The complex and difficult business of maintaining co-operative grower relationships has been one of Holman Cloud's principal preoccupations from the first and this new plan gave him the opportunity to cement these friendly relations still further.

During the 1952 season, another plant at Bartow, Florida, was leased and 1,850 acres of additional groves were purchased in Polk County. A processing plant at Lake Alfred was also added to the steadily growing group.

In 1954, the large holdings of Dr. P. Phillips Co. were purchased, which consisted of groves in nine Florida counties, as well as a fresh fruit packing house. This \$5½ million deal was soon dwarfed by a \$40 million transaction, the acquisition of the Snow Crop facilities. Apart from a number of plants in other states, this included three large plants in Florida, at Auburndale, Dunedin and Frostproof, as well as another fresh fruit packing house, a fertilizer plant, and some 7,500 acres of groves.

All of these vast holdings have had to be welded into a coordinated whole and the fellow who did it was Holman R. Cloud.

The rapid growth of the new industry has resulted in offices being scattered around at various points and it has been necessary for Cloud to spend many hours on the long distance telephone and in driving many thousands of miles in his car to visit this far-flung empire. He'll still roll up the automobile mileage—he has a burning desire to see things for himself, but his and other company telephone bills will be materially decreased by the realization of one of his dreams, the centralization of offices and control of the entire Florida operation at one point.

A new office building, with some 55,000 sq. ft. of floor area, financed by the Mutual Life Insurance Co. and leased to Minute Maid on a long-term basis, is being erected in Orlando—a central point from which all operations may be supervised.



"Why Mr. Miller, from the way you horse around at the factory, I had no idea you were married."

SOUTHERNERS

OTHER NEWSMAKERS



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To guide the Editorial Department in planning future issues, please indicate below your interest in various RECORD features:

Feature	READ REGULARLY	READ OCCASIONALLY	DON'T READ
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Southerners at Work—Personality Sketches	()	()	()
New Plant Reports and Summary	()	()	()
New Product Announcements	()	()	()
World Trade, Port News	()	()	()
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Address

Charles P. Lohman has been elected a Vice President of the Pemco Corporation. He had been sales manager for the Baltimore company since 1944, and prior to that he was manager of ceramic sales for five years.

Floyd Guillot, Director of Industrial Finance & Thrift Corp., New Orleans, was elected 1956-57 International President of the National Office Management Association at the opening meeting of 37th annual Conferences and Office Equipment and Machinery Exposition held at Convention Hall in Philadelphia.

Anthony J. Bruno, Jr. has been appointed Technical Department Head of the Polymer Chemicals Division of W. R. Grace & Co. The multi-million dollar Grex Polyolefin resin plant that Bruno will head is now under construction in Baton Rouge, Louisiana.

R. R. Pittman, Little Rock, chief engineer of Arkansas Power & Light Company, was elected a vice president of the company by the AP & L board of directors. He joined the company as an electrical engineer at Pine Bluff in 1919.

Kenneth W. Walker and **G. Harold Horne** have been transferred to the new Brookhaven, Miss., plant of Standard Wire Cloth and Screen Company. Walker, who has had twenty-eight years' experience in the manufacture of insect wire screening, will be Works Manager. Horne, with the York, Pennsylvania company for fifteen years, will serve as Treasurer and Office Manager.

W. Roberts Wood has been elected President of the Girdler Company, Louisville, Ky., a division of the National Cylinder Gas Company, Chicago. Wood succeeds **George O. Boomer**, who retired as Gridler's operating head.

Edward A. O'Neal, Jr. has been named President of the Chemstrand Corporation to fill the vacancy created by the resignation of **Henry H. Bitler** at Decatur, Alabama. Bitler is returning to American Viscose Corporation.

W. K. McCready, Director of Manufacturing for Velsicol Chemical Corporation, announced the promotion of **F. E. Richardson** to the post of Plant Manager of the Memphis plant. Richardson had been Assistant Plant Manager since November.

Owen Richards has been named manager of Metal & Thermit Corporation's new mine and titanium ore dressing plant now under development at Beaver Dam, Virginia.

W. L. Gorrell has been appointed manager of General Electric's electronic tube plant in Anniston, Alabama, according to **L. B. Davis**, general manager of the company's receiving tube sub-department.

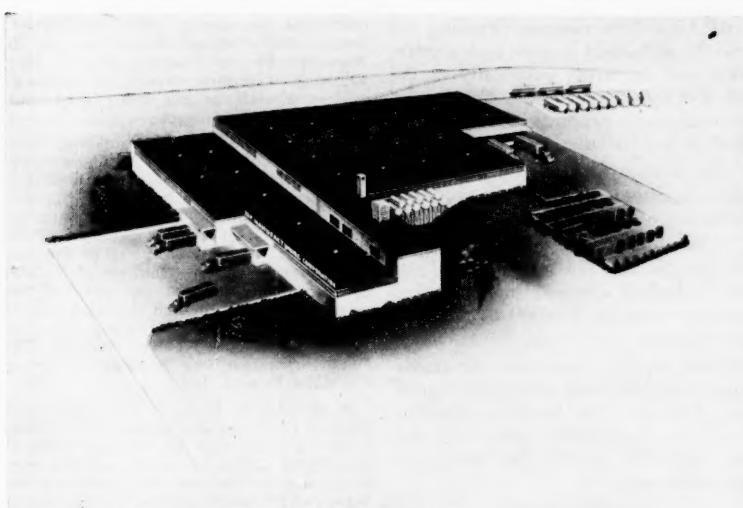
Robert W. Beal was named Director of Development at the Corps of Engineers Research and Development Laboratories, Fort Belvoir, Virginia. Beal has been with Engineering Laboratories since 1946.

Dr. Litkenhouse is on leave of absence from Vanderbilt University, where he has been head of the Chemical Engineering Department since 1941, and executive director, Division of Industrial Research since 1953.

Walker Hamilton was appointed special consultant to the Forest Products Division of Olin Mathieson Chemical Corporation.

Claude Ramsey, Jr. was appointed production manager of American Enka's new \$21,000,000 rayon staple fiber plant, now under construction at Lowland, Tennessee.

INDUSTRIAL PROGRESS



ATLANTA. Zep Manufacturing Corporation, one of America's largest manufacturers of Sanitary and maintenance chemicals, with its home office in Atlanta, recently announced expansion plans. They provide for the construction of a new manufacturing plant and technical laboratory. When equipped, the unit will represent a cost of approximately \$750,000. In addition to the new installation, the Company will retain its large warehouse and executive office building located on Edgewood Avenue in downtown Atlanta. The new manufacturing plant and laboratory will be under the supervision of Dr. Harold B. Friedman, Director of the Company's Research and Manufacturing Division.

GE Bets On Southern Locations

Following is a list of the Southern locations where the General Electric Company has established plants during the past decade, together with the products manufactured and the number of persons employed, or anticipated to be employed when the newer plants reach full production:

<i>City</i>	<i>Product</i>	<i># of Employees</i>
Jonesboro, Arkansas	Specialty component motors	525
Anniston, Alabama	Electronic tubes	1,650
Gainesville, Florida	Communications	1,700
St. Petersburg, Florida	Electronics equipment	650
Rome, Georgia	Medium power transformers	1,777
Lexington, Kentucky	Sealed beam headlamps	350
Lexington, Kentucky	Lamp glass	144
Louisville, Kentucky	Major appliances	12,000
Owensboro, Kentucky	Receiving tubes	4,700
Jackson, Mississippi	Fluorescent Lamps	320
Asheboro, North Carolina	Automatic blankets	350
Goldsboro, N. C.	Parts for lamps & radio tubes	150
Hendersonville, N. C.	Outdoor lighting	600
Hickory, N. C.	Distribution transformers	1,100
Irmo, South Carolina	Aluminum electrolytic capacitors	700
Memphis, Tennessee	Christmas & miniature lamps	500
Houston, Texas	Switchboards, panelboards, etc.	90
Tyler, Texas	Home air conditioning	1,100
Lynchburg, Virginia	Rectifiers	800
Roanoke, Virginia	Industrial controls	1,800
Waynesboro, Virginia	Electronic controls	700

Two New Florida Plants Give GE 21 in South

ST. PETERSBURG. General Electric's recent selection of plant sites in Gainesville and St. Petersburg, Florida, will bring GE's employment in southern plants to nearly 30,000 workers.

At present, GE maintains—or is constructing—plants in eleven southern states. The two Florida facilities are the first GE plants in that state and will be used for the manufacture of electronics equipment.

The St. Petersburg plant will be operated by the company's X-Ray department and will produce electronics equipment for the Sandia Corporation, Albuquerque, New Mexico, a prime contractor for the Atomic Energy Commission.

John H. Smith, X-Ray Department General Manager, said the new plant will employ from 600 to 700 men and women and will have an annual payroll of \$4-million. It is expected to be in operation by December 30, 1956.

A small number of specially-trained employees will be transferred to the new plant from the department's headquarters in Milwaukee, Mr. Smith said, but most employees will be recruited from the St. Petersburg-Clearwater area.

Mr. Smith said that one reason for the site selection was the good business climate in the area and the state, and that another factor was the availability of highly skilled workers for the operation of the plant.

The Gainesville plant, which will house the headquarters and manufacturing facilities of the communications equipment section, is being built at a cost of \$4 million.

Most of the 1,700 men and women that will be employed in the plant, will be recruited from the Gainesville area. It is expected that the plant will be in operation in two years. At the present time the headquarters and manufacturing facilities of the communications section is centered in the Utica, N. Y. area.

Chambers Company Opens Plant in Oxford, Mississippi

OXFORD, MISS. The Chambers Manufacturing Corporation has opened a million-dollar plant at Oxford, Miss., to manufacture its gas and electric cooking equipment.

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VIENER METALS

INDUSTRIAL PROGRESS

All Chambers ranges, including the console and built-in gas and electric lines, will be made eventually at the 100,000 square-foot plant. Previously, the company's products were made at Shelbyville, Indiana.

The building is located on a 35-acre site near Illinois Central Railroad track just south of Oxford.

Dimensions of the factory itself are 400 by 250 feet. In addition, the site will include a concrete roadway and parking space of 100,000 square feet for 150 cars.

There is also a separate, air conditioned office building with 3,000 square feet of space. This building, like the factory, is completely fire-proof and has a sprinkler system for additional fire protection.

PROGRESS NOTES

► JACKSONVILLE Atlantic Coast Line Railroad is moving its headquarters to Jacksonville, Florida, it was disclosed recently. At present, the railroad's headquarters are located in Wilmington, North Carolina. Jacksonville mayor, Haydon Burns, said that ACL plans to build the \$6 million plant on the St. Johns River and that the move will bring 7,000 persons, including families, to the area.

► MAULDIN, S. C. The UBS Chemical Corporation of Cambridge, Massachusetts is constructing a new plant in the Greenville metropolitan area of Mauldin, South Carolina.

► HATTIESBURG, MISS. Dixie Aluminum Tube Corporation is constructing a new \$400,000 plant in Hattiesburg, Mississippi. When in full operation, the plant is expected to employ slightly more than 300 persons.

► ATLANTA. Square D Company will begin construction of an electrical equipment assembly plant in Atlanta as the base of expanded operations in the southeast United States. Involving an investment of \$500,000 and designed to permit future additions, the 31,000 square foot structure will house Square D's regional headquarters offices, as well as provide production facilities. Square D President, Gordon Patterson, expressed the belief that "the southeast is on the threshold of a whole new era of raw material development, industrial growth, and agricultural modernization."

► NORFOLK, Norfolk Port Authority has made public, plans for a major waterfront development. Michael M. Mora, general manager of the authority, said the project is at the top of the authority's priority list. The port's business has been climbing steadily, and its present facilities are hard-pressed to handle the increased traffic.

► LONDON, S. C. The Bowater Paper Corporation intends to build a new pulp mill near Rock Hill, South Carolina. Sir Eric Bowater, corporation chairman, told 1,700 shareholders that work on the new project will begin as soon as the details were cleared with local authorities.

► ST. AUGUSTINE. The Georgia Division of Lockheed Aircraft is taking over the air-

craft and engineering office of Fairchild Engine and Airplane Corporation in St. Augustine, Florida. Rumor is that this office will work in conjunction with the company's nuclear aircraft project being established near Dawsonville, Georgia.

► GREENWOOD, MISS. Supreme, Incorporated, manufacturers of electronics equipment, has recently merged with a Cleveland, Ohio firm and is now called the Supreme Electronics Corporation. The merger was announced by Grady Perkins, president of Supreme, Inc. Perkins, president of the new corporation, said that employment will be boosted to more than 200 employees and that several new types of high precision meters, color television and radio testing apparatus will be manufactured by the new firm. The Ohio corporation was formerly known as Cleveland Patents, Inc.

► RALEIGH. Louis V. Sutton, Carolina Power & Light Company president, told stockholders recently that the company plans to spend \$115 million within the next five years to expand its facilities. He attributed the heavy construction budget to, "anticipation of continued growth in the Carolinas."

► BRUNSWICK, GA. Olin Mathieson Chemicals has completed arrangements for the purchase of a large tract of land here from the Brunswick Pulp and Paper Company. At this time Mathieson also announced that it would proceed immediately with construction of equipment and facilities initially costing in excess of \$1 million for rail and water movement of chlorine and caustic soda at Brunswick. A \$7.5 million expansion plan for the company's chlorine and caustic soda plant at McIntosh, Alabama was made public earlier.

► PORT ST. JOE, FLA. The Badger Manufacturing Company of Cambridge, Mass., has announced that construction is now in progress on Glidden Company's \$3 million tall oil processing plant here. The plant is scheduled for completion late in 1956 or early 1957.

► PHILADELPHIA, PA. William P. Drake, President of the Pennsylvania Salt Manufacturing Company, has recently announced the completion of the Dyer's Hill Flourspar mine in Crittenden, County, Kentucky. The development of this mine and the expansion of milling facilities in the same area began early in 1954.

► SENECA, S. C. R. M. Cooper, Director of the State Development Board, has announced that a 144 acre tract of land near Seneca, South Carolina, has been purchased by the Oconee Realty Corporation for a long range development program.

► MONTGOMERY, C. J. Seyffer, assistant general sales manager in charge of dealer relations for the Ford Motor Company, told the Montgomery, Alabama Sales Executives Club recently that Ford and its dealers have more than \$400 million invested in Southern economic growth. This figure is three times as much as before World War II. After two new plants are finished, the company's total Southern employment will be nearly 12,000 persons.

► TAMPA. The Tampa Electric Company will soon be served by the largest coal unloading tower on the Florida Coast. The tower will be supplied by the Mead-Morrison Division of McKiernan-Terry Corporation for the Nashville Coal Company. It will have an unloading capacity of 700 tons per hour.

INDUSTRIAL PROGRESS

New Plant Summary

► DALLAS. Ground will soon be broken for a \$6.5 million Southwest Homefurnishing Mart, according to developer and financier Trammel Crow, who will build and operate the new furniture distribution center. The mart will stage two markets a year for Southwestern furniture retailers. Crow said that home furnishing sales in the Southwest last year were up 18 percent against a national average increase of 8 percent.

► BETHESDA, MARYLAND. Gardner Laboratory reports that it has completed a new building near Washington. Demonstration space for permanently showing the company's instruments was included in the floor plans.

► FT. LAUDERDALE. An engineering office has been set up here by H. K. Ferguson to handle its industrial design work in the South.

► ATLANTA. The Fairfield division of the Food Machinery & Chemical Corporation has opened an office and warehouse here.

► FRANKLIN, KL. Kendall Company is constructing a two-story plant here for the production of Polyken industrial tapes. The new 35,000 square foot plant will triple the company's capacity for these products, which are now being made in Chicago.

► HOUSTON. This city—the largest in the country with only one department store—is scheduled to have another by late August. Joske's of Houston will soon be the lead tenant in the new Gulftate shopping center, seven miles from downtown Houston. The total worth of the entire shopping center is reported to be \$32 million.

► LOUISVILLE. Union Carbide and Carbon Corporation has signed a contract with the Rubber Producing Facilities Disposal Commission for the purchase of the government-owned alchohol-butadiene plant here. The price was set at \$3.1 million. The sale is subject to clearance by the Attorney General on anti-trust matters and to review by the Congress after the Commission makes its report. It is the last of the 28 government-owned rubber producing facilities which the Commission was authorized to sell.

► LYNCHBURG, VA. Max I. Alimansky, general manager of General Electric's Rectifier Department, has announced that a general contract has been awarded for the construction of a new plant here to house his department. Completion is scheduled for early spring of 1957, with eventual employment of 1000 persons.

► NASHVILLE, TENN. A floating pumping station to supply process water for Ford Motor Company's glass plant along the Cumberland River near here is now under construction.

► CHARLESTON. Former U. S. Senator Charles E. Daniel has been appointed to head a committee to study and recommend a port development program to the South Carolina State Ports Authority. The three-man committee was created through legislation passed by the State's General Assembly. Funds will become available for development use in fiscal 1957.

► MARIETTA, GA. Lockheed Aircraft's Marietta, Ga., Division has received a new multi-million dollar contract for electronic modification work on a large number of B-47 aircraft. The program covers a period of 13 months, extending through May, 1957. At the peak of the schedule, some 15 airplanes will be in work at one time.

The following is a summary of major industrial plants reported to the RECORD during the month of June, 1956. This information has been checked with the Southern Association of Science and Industry and various state development agencies.

Number of employees is indicated by the code: A (under 25); B (25-100); C (100-250); D (250-1000); and E (over 1000).

ALABAMA

Florence—National Pool Equipment Co., swimming pools, \$500,000. (D).
Goodwater—Dixiecraft Co., Inc., equipment for super markets, \$45,000. (B).
LaFayette—International Latex Corp., foundation garments, \$300,000. (D).
Talladega—Tach-Fast Mfg. Co., metal accessories, \$100,000. (B).
Tuscaloosa—Gulf Hanger Co., Inc., coat hangers.

ARKANSAS

Little Rock—Hardy & Co., hardboard. (C).
Mount Ida—Concern to manufacture gloves. (Indianapolis Glove Co., Indianapolis). (C).

FLORIDA

Ft. Pierce—Tree Sweet Co., citrus concentrate. Plant under construction. (C).
Gainesville—General Electric Co., communications equipment. Construction to begin mid-1956 with operation to begin within two years, \$4 million. (E).
Jacksonville—Lenahan Aluminum Window Co. Began operations in May. (B).
Jacksonville—Woodco Corp., aluminum hardware and mill supplies. (B).
Miami—Air Mar, aircraft parts. Operations began in May. (B).
Miami—Aircraftsmen, Inc., auxiliary aircraft equipment. (B).
Miami—Aircraft Machine Corp., auxiliary aircraft equipment. (B).
Miami area—Lehigh Portland Cement Co. Construction to begin soon, \$20 million.
Orlando—Orlando National Electronics Co., electronics equipment. Began operations in May.
Ormond—Electro-Tec Corp. (S. Hackensack, N. J.), George J. Pandapas, Pres.

Palm Beach—Frohman Manufacturing, Inc., aircraft engine parts. (B).
Pensacola area—American Cyanimid Co., acrylic textile fiber, \$27 million. Construction to begin December, 1956. (D).

Pensacola area—Blaw-Knox Co., polyvinyl chloride resin. Construction to be completed late 1956.
Pinella Park—General Electric Co., A. F. Persons, General Mgr. Construction to begin mid-1956 with operation est. to begin December, 1956, \$4 million. (E).

St. Augustine—Lockheed Aircraft. Operations began in June. (B).
St. Petersburg—Hamilton Standard, aircraft parts. Operations began in June. (D).
Vernon—Vernon Manufacturing Co., wooden spools for paper rolls.

GEORGIA

Atlanta—Square D. Company, Marietta Blvd., electrical controls and distribution devices. Construction to begin August, 1956, with operation est. to begin late 1956. \$500,000.

Meigs—Waverly Petroleum Products Co., oil and grease absorbents. In operation early 1956. \$250,000.

Rossville — Burlington Industries (New York, N. Y.).
Swainsboro—Swainsboro Sportswear Co., wearing apparel, \$350,000. (D).

KENTUCKY

Erlanger—Cox Machinery Co., remake used machinery, \$150,000.

Lexington—Interstate Bakeries Corp., bakery products.

MARYLAND

Baltimore—Oriole Paints, Inc., 2700 Annapolis Road. Construction began early 1956.

MISSISSIPPI

Bruce—Bruce Industries, wearing apparel, \$135,000. (D).
Columbus—Miss. Pulp and Paper Co., Kraft pulp and paper, \$30,000. (D).
Eupora—Luger Furniture Co., \$225,000. (C).
Greenwood—Conmar Zipper Co., zippers. In operation early 1956.
Hattiesburg—Dixie Aluminum Tube Corp. (Rome, Ga.), aluminum tubing, \$500,000. (C).
Kosciusko—Wayne Knitting Mills, hosiery, \$125,000. (C).
Osyka—Amar Enterprises, Inc., toys.

NORTH CAROLINA

Ashokla—Building and Marine Products, Inc., transportation equipment. (B).
Charlotte—Stein-Hall & Co., Inc., chemicals and allied products. (B).
Concord—LA Be Dean Hosiery Co., textile mill products.
Concord—Mardon Hosiery Mills, Inc., textile mill products.
Durham—Stickley Specialty Yarn Corp., textile mill products.
Farmville—A. C. Monk Tobacco Co., tobacco.
Goldsboro—Peacock Textiles, textile mill products. (B).
Hertford—Honduras Wood Products, furniture and fixtures. (C).
High Point—Childress Concrete Co., stone, clay products. (B).
Lumberton—Cavalier Bag Co.
Mooreville—Syntex Fabrics, Inc., textile mill products. (B).
Nashville—Nash Garment Co., apparel and other finished products. (B).
Rocky Mount—Fields Tobacco Co., tobacco.
Shelby—J. W. Wood Elastic Web Co., textile mill products. (B).
Wendell—Austin Farms, Inc., food and kindred products.
Wilmington—Carolina Forest Products, Inc., lumber and wood products. (B).

OKLAHOMA

Washington—Phillips Pacific Chemical Co., ammonia.

SOUTH CAROLINA

Charleston—American Sugar Refining Co., paper bags, \$2 million.
Mauldin—Union Bay State Chemical Co.
Orangeburg—Master Grain and Feed Co.
Rock Hill—Bowater Paper Corp., pulp mill. Construction to begin mid-1956. (D).

TENNESSEE

Chapel Hill—General Shoe Corp. (C).
Fulton—A pulp and paper mill planned, W. O. Suggs, President, \$35 million.
Humboldt—J. Hungerford Smith Co., soda syrups. Completion est. 1957. (D).
Newport—Bullard Industries, Inc., metal products. (D).
Sherwood—Epiphany Corp., shirts. (C).

TEXAS

Euless—Menasco Manufacturing Co., aircraft parts, \$4.5 million.
Lubbock—Fruehauf Hobbs of Texas. (B).

VIRGINIA

Lynchburg — General Electric Company, power rectifiers. Construction to begin June, 1956 with operation est. to begin early 1957. (D).

Yorktown—Petrolite Corporation, oil refining.

Grottoes—Reynolds Metals Co., plastic film. Operation to begin late 1956. (D).

WEST VIRGINIA

Arroyo Bottom—Koppers Co., Inc. (Pittsburgh) plan two chemical plants. The first, expected to be completed by late 1957, will produce mecatonic acid.

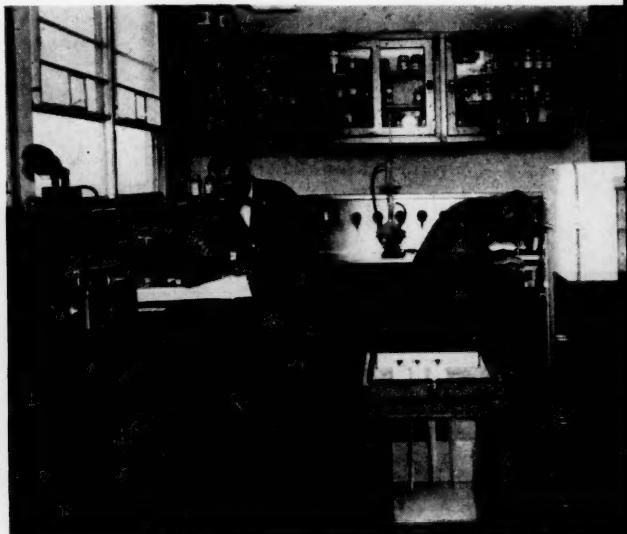
Parkersburg—Carborundum Metals Co., zirconium metal and hafnium oxide. Operation est. to begin late 1956. (C).

Willow Island—American Cyanimid Co., analine, adjacent to present site. Operation est. to begin late 1956. (D).



Two scientists administer isotope-treated mash to chicken, which will enable them later to study radioactivity of hen.

Chemists are shown working in the Radiological laboratory of the American Tobacco Company.



NEW SOUTHERN LAB BRINGS ATOM TO FARM

RICHMOND, VA. No one has yet discovered a hen that can lay a golden egg, but science has recently developed hens that can produce radioactive eggs, and in the amount of valuable information these eggs yield, they are worth their weight in gold.

The "hot" eggs have been laid by hens fed on radio-isotope-treated mash at an experiment station near Oak Ridge. This experiment has made it possible to trace the path of calcium from the chicken feed through the hen's body into the egg, thus providing knowledge through which more effective feeding methods may be developed.

Unusual experiments such as this are being conducted daily in laboratories throughout the nation, not just to serve academic curiosity but for the practical purpose of finding ways for the farmer to produce more top-quality products

at less effort and cost. A wide program of research, made possible by the co-operation of the Atomic Energy Commission, is aimed specifically at applying the results of great discoveries of nuclear science to serve the farmer in his every day activities.

The South's newest facility for such atomic investigations—an isotope "farm"—was dedicated here recently at the Medical College of Virginia. The new laboratory, a gift of the American Tobacco Company, is known officially as "The Radiological Nutriculture Laboratory."

Housed within a standard greenhouse, the isotope farm is equipped to feed plants a diet of radioactive materials. The key to the process is the use of radioactive materials to "trace" chemical and physical processes.

Atoms of familiar elements made

radioactive can be instantly detected in any process or solution by use of Geiger counters and similar instruments. Not only does this provide a reliable means of identification of different elements, but it will tell *how much* of a given material is present.

The sensitivity of radioactivity measurement techniques is almost unbelievable—in a phosphorus-containing compound, for example, it is possible by tracer atoms to determine the presence of as little as one billionth the amount of phosphorus detectable by ordinary chemical means!

One of the most useful applications of this method has been in the study of fertilizer utilization, particularly the uptake of phosphate fertilizer by a growing plant. The efficient use of phosphates, of course, is extremely im-

portant to farmers because some 16 million tons of phosphate fertilizer costing \$300,000,000 are used each year in this country. By incorporating radioactive phosphorus into fertilizers, scientists have been able to study the movement of phosphorus atoms from the fertilizer through the soil into and through a plant, providing new information on the variability of different crops in their use of fertilizer phosphate, the soil conditions which promote good use of phosphorus, and the relative effectiveness of different types of phosphate fertilizers.

Studies conducted in this manner have already indicated that in many cases farmers may be using much more of certain kinds of fertilizers than is required. Experiments have shown, moreover, that in spite of the use of liberal quantities of fertilizers, some crops obtain as much as 80 to 90 percent of their phosphorus from the supply already present in the soil.

Watch Corn Growth

Through similar methods, experimenters have learned that potatoes take up phosphorus from the added fertilizer throughout the growing season. Young corn will also take up fertilizer phosphate but the older corn plant obtains most of its phosphorus from that fixed in the soil. Research men believe this may suggest that potatoes should be heavily fertilized before and during the growing season, while for corn the best practice might be to apply phosphorus as long as a year before the growing season in order to raise the phosphate level of the soil gradually. These ideas, of course, must be explored more exhaustively before they are established as fact and put into farming practice.

Because few agricultural experiment stations now have facilities for mixing radioactive phosphorus with fertilizers, the AEC is currently financing the making of such research materials by the United States Department of Agriculture at its Beltsville, Maryland, research center. During a recent year radioactive materials for soils research were sent to 22 state agricultural experiment stations for use in 67 different studies.

According to the director of this program, more has been learned in four years about phosphate fertilizers than



A scientist observes solution being supplied to tobacco plants in Radioactive Nutriculture Chamber.

has been achieved by other means in the previous 50 years!

Another interesting use of radioisotopes to serve agriculture has been explored by the Southwest Research Institute of San Antonio. This group has used tracers to determine whether 2-4-D poison sprayed on the leaves and bark of mesquite trees was translocated to the roots of the trees. This investigation indicated that the poison solution could be carried to the tree roots and thus led to the possible development of a new method for eliminating the troublesome mesquite growth which infests Western ranch lands.

Radioisotopes are being employed by the U. S. Department of the Interior to explore methods for reducing the cost

and increasing the efficiency of irrigation systems. Tracers are being used to find better ways to control weeds in irrigation ditches by learning how the seeds are carried over from season to season. Also, radioactive materials are being employed to locate seepage leaks from canals.

Radioactive Mosquitoes

Even mosquitoes have been made radioactive in the ever-widening use of nuclear science. Mosquito larvae treated in radioactive phosphorus remain radioactive for the rest of their lives and by using small test groups traceable with Geiger counters, scientists can determine where mosquitoes live, how they

RESEARCH

move, and how long they live. Similar methods may be used to study the migration of birds.

Already, the nuclear approach has revealed that both plants and animals are dependent for proper growth on obtaining extremely small amounts of vital minerals. At the Florida Agricultural Experiment Station studies have been made of the need for such elements as copper, cobalt, molybdenum, manganese, and zinc in the diet of animals. Both cattle and sheep have been found to develop serious deficiency symptoms when fed on forage containing less than

4 to 7 parts of cobalt per hundred million. Animals such as horses, however, remain in excellent health when maintained on the same pasture.

Radioactive sulphur has been used to determine the cause of "sulphur burn" on citrus fruit. In the past it was suggested that sulphur dusted onto the fruit to combat pests might in some way be converted to sulphuric acid and burn the skins of the fruit. Others felt that sulphur added to the soil in fertilizers might be responsible. By using radioactive sulphur to trace various processes, it was possible to determine how

the fruit burn occurred and to suggest methods for avoiding it.

Radioactive materials have also been used to study the effectiveness of insecticides. DDT has been synthesized with radiocarbon to determine its effectiveness against aphids when coated on the surface of potato leaves.

Perhaps the most important agricultural research being conducted with radioactive materials is the study of the process of photosynthesis—the fundamental process by which plants convert sunlight and carbon dioxide into starch. University of Texas scientists are approaching this problem by studying the growth of the tips of corn roots. In these investigations, a corn plant is exposed to air containing a radioactive gas. The plant absorbs the gaseous compound through its leaves and gradually transfers to its root tips the tracer molecules which are used by the plant in building living cells.

The Texas researchers have developed a method for freezing the root tips in a fraction of a second, thus preserving the exact stage of growth before disrupting chemical changes can take place. In this manner they hope to study step-by-step the formation of cellulose in the plant and to obtain a history of the complete process.

Scientists at the University of North Carolina are working toward the photosynthesis problem using a slightly different approach but also employing radioactive isotopes. Their work involves exposing fruits of certain plants to radioactive carbon dioxide in sealed containers for short periods of time and then examining cross sections to determine to what extent gaseous carbon dioxide permeates the skin of the fruit.

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RESEARCH

Southwest Research Does \$3.5 Million Volume

SAN ANTONIO. Southwest Research Institute did a \$3.5 million volume of applied research sponsored by business, industry and the government during the past year, the Institute's recently published 1955 annual report shows.

This year's budget for sponsored research is expected to reach beyond the \$5 million mark, it stated.

The tremendous growth and expansion of Southwest Research Institute since it was founded eight years ago is told in the report. In the past five years alone, the San Antonio research center has grown from a staff of 105 doing a \$200,000 research volume to one of 533 with a \$3.5 million volume of research.

Southwest Research Institute is a non-profit research organization dedicated to the economic and industrial development of the Southwest through applied research sponsored by business, industry, trade associations and government.

By the end of 1955, Southwest Research Institute had gathered together many nationally known scientists from over the nation and other countries and increased its facilities and equipment investment to a total value of around \$2 million. The number of research projects underway has tripled in the past five years, the report shows.

"The significance is not just in its growth alone," said Dr. Harold Vagtborg, president of Southwest Research Institute. "But in the enlarging scope with which the Institute renders a research service to business, industry and the area."

"Scientists at Southwest Research Institute have created new frontiers of opportunity for business and industry and uncovered in varying degrees, the shape of still newer frontiers destined to be the boundaries of a better world to come."

During its eight year history, Southwest Research Institute scientists have completed 942 research projects for 482 business, industrial, government and individual sponsors. Of this total, 119 new projects were initiated during the past year, the annual report showed.

Dr. Vagtborg said that Southwest Research Institute's plans for the year ahead point toward continuing expansion.



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sion in research. In order to meet the growing demand for research services, Southwest Research Institute has launched a five-year development program to provide buildings and facilities for the increasing staff and the equipment necessary to accomplish the present and potential research activities.

The Institute is continuously expanding its capacities and facilities for providing business and industry with productive economical research and the economic advantages possible through technological assistance, Dr. Vagborg said.

Southern Steel Output Up 70 Percent in Past Ten Years

NEW YORK. In the past ten years, steelmaking capacity in the South has been increased 70 percent. This is twice the national average, Robert S. Lynch, president of Atlantic Steel Company, said recently in addressing the 64th General Meeting of American Iron and Steel Institute at the Waldorf-Astoria.

Some steel companies in the South, Lynch noted, have increased capacity by about 200 percent in just one decade, and three producers were not even in operation ten years ago.

"It is no accident," he continued, "that the number of steel producers has been growing—and that the smaller companies in many instances have been expanding far more rapidly than the major corporations."

Responsible management today knows the difference between fair competition and destructive competition. Big companies seek expansion for the whole economy as well as for themselves. He pointed out that they encouraged the growth of smaller enterprise both inside and outside the industry.

"Backing the South's industrial expansion," Lynch said, "is a supply of raw materials of great national importance. Production of synthetic fibers, for instance, has become entirely a southern industry. Today about 50 percent of the nation's minerals are produced in the South—including sulfur, magnesium and titanium, along with petroleum and coal. Here also are located a majority of the nation's petrochemical plants, over 50 percent of its ammonia production, a large amount of its timber output, a steadily increasing share of its wood, pulp and paper production and a large part of the nation's atomic power production."

National Survey Shows Southern Industry Plans Major Investment in Automation

A recently completed nationwide survey dealing with automation has confirmed what many southern businessmen have known for some time—that there is a great future for automatic machines in the South.

A 12-page brochure summarizing the results of this survey conducted by the American Society of Tool Engineers is now available to management executives.

The booklet, "Automation—What's Ahead?" covers many of the nation's industries, in plants of all sizes, and every geographical region of the United States.

Facts brought to light indicate that southern industry estimates that the total automatable potential is equal to that in the more highly industrialized Middle Atlantic and East North Central states.

Industry in this area believes that it will have to replace 15 percent of its present machining equipment, 10 percent of its current metal forming equipment, and between 15 and 20 percent of its materials handling and inspection equipment. Replacement of production welding and grinding and finishing equipment would not be extensive.

A complimentary copy will be sent to the executive officer of a company when requested on company letterhead. Additional copies are available at \$5. Address requests to: Automation Survey; American Society of Tool Engineers; 10700 Puritan Avenue; Detroit 38, Michigan.

Bureau of Mines Report Cites Carolina Mica Lead

According to another survey conducted by the U. S. Bureau of Mines, the state of North Carolina is by far the leading producer of mica in the United States.

During 1954, the state was responsible for \$3.2 million of mica sold or used by producers in the United States. The total sum for the six states figuring in the report totalled more than \$4.1 million.

New Hampshire was second to North Carolina with a \$246,033 volume of business.

The report is available from the mineral Industry Surveys, United States Department of the Interior, Bureau of Mines, T. H. Miller, Deputy Director.

OTHER RECENT RELEASES

Petroleum Refining With Chemicals, by Dr. Kenneth A. Kobe and V. A. Kalichevsky, published by Elsevier Co., Univ. of Texas, News & Information Service.

Tabular Summary of Foreign Water-borne Commerce of Virginia Ports Calendar Year and Fourth Quarter of 1953 Compared with Calendar Year and Fourth Quarter of 1954, prepared by Research Economist, Virginia State Ports Authority, Norfolk, Va., April, 1956, 44 pp.

Making Money Making Pickles—Mississippi Farm Credit Clinics, Bankers FARM Bulletin, Federal Reserve Bank of Atlanta, May, 1956, 4 pp.

Assets, Liabilities and Capital Accounts Commercial and Mutual Savings Banks December 31, 1955, Federal Deposit Insurance Corp., Wash. 25, D. C., 60 pp.

Retailing—some significant current developments, by William R. Davidson, Georgia Business, the Bureau of Business Research, College of Business Administration, The Univ. of Georgia, Athens, Ga., March, 1956, 12 pp.

Nitroparaffin Symposium, Industrial Chemicals Dept., Commercial Solvents Corp., 260 Madison Ave., New York 16, N. Y., 47 pp.

Questions and Answers About the Atom In Your Community, Alabama Power Co., Birmingham, Ala., 22 pp.

Ten Years of Research, Annual Report, Carver Foundation, Tuskegee Institute, Ala., 15 pp.



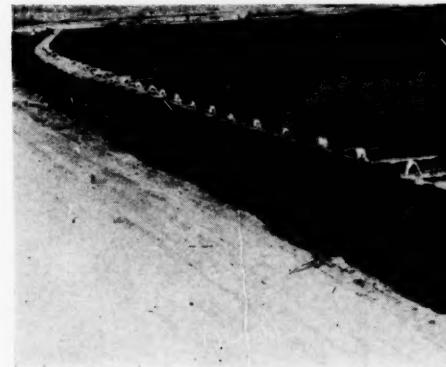
"Let me put it this way—if you were a piece of machinery, you'd have to be scrapped."

This watertight liner is used to prevent seepage, and will undoubtedly be favored among farmers with stock-watering pond troubles.



New Southern Products

Flexible gated tubing costs about one-fourth as much as conventional gated pipe.



In The Spotlight

CLEMSON, S. C. A watertight lining for irrigation and stock-watering ponds to prevent loss of water through seepage, and a flexible gated tubing fitted with adjustable flow controls to distribute water between plant rows take the lead in the product parade this month.

The innovations are still in the trial stage, but both show a lot of promise for the drought-stricken farmer and rancher.

At present, the new weapon for the fight against drought and attendant crop damage is undergoing trials at various experiment stations around the country. The liner is made of Krene plastic and if it is accidentally torn, it can be repaired or patched.

The lining may also allow tomorrow's farmer to improve on nature by letting him locate ponds in the most convenient spots regardless of soil permeability.

Last fall, a farm pond at Clemson College was lined with Krene, heat sealed to produce a large tarpaulin covering on about four-tenths of an acre. The flexible, lightweight liner was unrolled over bare ground on the bottom and sides of a scooped-out area. Without a lining, the level of the water fell about 3 inches a day due to seepage. While the field trials are still not complete, Professor A. W. Snell, head of

the Agricultural Engineering Department at the college, reports that the water has maintained a fairly constant level.

During a dry period, the water conserved by a plastic pond lining might spell the difference between a marketable crop and a disastrous burnout. With the water falling at a rate of 3 inches a day due to seepage, in a week's time the saving from a half-acre pond would be enough to put an inch of water on more than 8 acres of crop land.

Another promising product is a flexible type gated tubing that costs about one-fourth as much as conventional gated pipe and rolls up compactly for carrying and laying out.

By eliminating the need to watch canals and start siphon tubes when water gets low in the ditch, this tubing with individually regulated outlets cuts operating labor 50 to 75 percent, according to the manufacturer.

Both the seamless extruded tubing with evenly spaced outlets and the molded control plugs are made of black-pigmented polyethylene which withstands sun rays and climatic changes, and does not rot, will not support mould growth or absorb water. A 300-foot length of 12-inch tubing weighs but 95 pounds.

WACO, TEXAS. A unique "wall of conditioned air" assured President Eisenhower's comfort when the chief executive appeared at convocation ceremonies held at Baylor University recently.

The Heart-O-Texas Coliseum in Waco, scene of the ceremonies, lacks climate-control equipment and is apt to be unbearable in the early summer heat.

To insure the President's comfort, Carrier Corporation equipped the speaker's platform at the huge hall with a "spot" air conditioning system.

"In all, the air conditioning supplied complete comfort for over 100 people on the platform," John Gillham, manager of Carrier's Unitary Equipment Division Dallas office, revealed.

"To do the trick, the installation confined cooling to the platform area, virtually placing a blanket of air conditioned air over the particular location," Gillham explained. He added that he thought the unique application was the first of its kind.

The units furnished a total of 20 tons of cooling. Located near the front on both sides of the 60-foot stage, the units provided a draftless flow of cool, filter-pure and properly dehumidified air throughout the 1,500 square feet of platform area.

NEW PRODUCTS



Noiseless Trash Can Now On Market

A noiseless trash can has just been introduced by Loma Plastics of Fort Worth, Texas. To date it is the largest housewares item made of the wonder plastic, polyethylene.

Highly portable, it can be carried with two fingers without strain. It is rust proof, unbreakable, odorless and comes in four attractive colors—lawn green, autumn red, harmony grey and lemon yellow. It is sturdy, unbreakable, and when run over by a truck—amazingly jumps back into perfect shape! It is acid-proof, will not rust and holds a bonus of 22 gallons.

An exclusive feature is the lock-lid

cover and 360-degree "all-around" handle. The lock-lid cover ends another problem of stray animals getting into the trash that has plagued many. The rim is so moulded it forms a handle all around the top edge for ease in moving. It stands 27-3/4 inches high, is easy to clean, and is priced at \$12.98 at hardware and department stores.

Jacketing Costs Slashed With All-Aluminum Process

HOUSTON. A new deep-corrugated aluminum jacketing for tanks, towers and vessels has just been introduced by Childers Manufacturing Company, Houston, Texas, reports Jack LaFave, Manager of Childers Jacketing Division.

Childers introduced corrugated aluminum pipe jacketing eight years ago, which, according to LaFave, cuts jacketing costs up to one-third. The addition of deep corrugated jacketing for tanks, towers, and vessels, now makes it possible to do an all-aluminum jacketing job on any installation. Appearance is improved, and installation costs are cut because of lower first cost and ease of cutting and handling.

A new factory-applied moisture barrier, added to Childers corrugated jacketing, has been developed to completely eliminate corrosion of the jacketing from within, providing a virtually permanent jacketing job. The moisture-barrier process took more than three years to develop. Two years ago, a tough paper was found which would stand the more than 30,000 pounds of pressure in the corrugating press. It wasn't until last year that an adhesive was discovered that would hold the water resistant paper barrier to the sheet aluminum during processing.

New Power Rotated Jib Lifts Weights Up To 15 Tons

LONGVIEW, TEXAS. Industry's first power-rotated jib crane with lifting capacities up to 15 tons has just been introduced here by R. G. LeTourneau, Inc.

Available in capacities of 6, 7.5, 10 and 15 tons, each crane has a 25-foot boom which, when rotated in a full circle, covers 1,965 square feet of floor space. The electric rotating mechanism, as well as electrically-powered hoist and hoist trolley which are available, all are built to provide extreme precision and fraction-of-an-inch control not previously available to industry. This "inching control" is incorporated into all phases of the design for smooth handling and exact spotting.

All controls for both the jib crane and the hoist selected are of simple push-button design, conveniently suspended together from the hoist to permit handling by a single operator.

R. L. LeTourneau, company vice president, said many applications are developing for the new ultra-heavy duty units, particularly where one-man handling is required of such items as castings, cargo crates, ingots, machine tools, pattern molds, power units.

Caulking Compound Withstands Freezing, Oven Temperatures

NASHVILLE. A new roofing and caulking compound that can withstand temperatures of 30 degrees below zero and will not burn at 600 degrees Fahrenheit has been developed by Aluma Life Company of Memphis from the residue of cottonseed and soybeans pressed from oil. Joe Dabney, president of Aluma-Life, developed the material.



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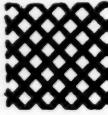
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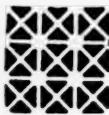
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Southern Accent

BY CALDWELL R. WALKER

Washington Editor, Conway Publications

WASHINGTON, D. C. The State of Florida showed the greatest rate of increase in motor vehicle registration during 1955.

Florida's increase of 14.8 percent, was followed by Alabama with 13.7 percent and North Carolina with 10.2 percent.

During 1955, registrations in the United States reached a total of 62,760,395, which was a rise of 7.2 percent over 1954. There was a total gain of a little more than 4.1 million over 1954, and represents the largest increase since 1950. At present, registrations are now more than double the 1945 figure. The 1955 total included 52.1 million passenger cars, 10.3 million trucks, and 255,249 million buses.

Percentage increases over 1954 were: passenger cars, 7.6; trucks, 5.0; and buses, 2.7 percent.

On the average, the largest gains occurred in the southern and western states and the smallest were registered in New England and a group of states in the midwest.

California—with 6 million—leads the field in the number of motor vehicles. Six other states exceed 3 million—Illinois, Michigan, New York, Ohio, Pennsylvania, and Texas. These seven states have over 28 million motor vehicles or more than 45 percent of all motor vehicle registration.

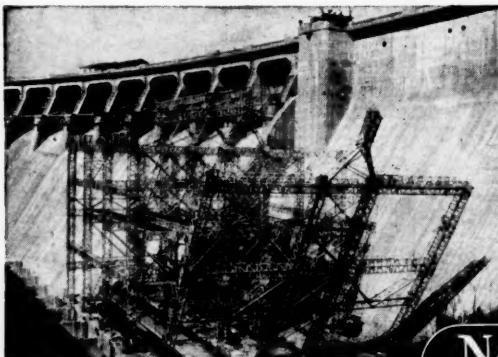
► The house has recently passed a bill which would help states and local communities eliminate the pollution of streams. Henderson Lanham, congressman from Georgia, said in a brief speech in favor of the bill, that the con-

servation of water resources and the maintenance of its purity is one of the great problems of the day and will become more serious as the years go by. Lanham went on to say that it is a national problem because most of the streams are interstate in character and many of the local communities do not have the income necessary to do the jobs themselves.

Congressman Lanham believes that the appropriation that will be neces-



Close by the capitol in Washington, steelwork of a second Senate Office Building is being erected by iron-workers. The new \$20,000,000 seven-story structure will provide crowded senators with 329 additional office rooms, a 500-seat auditorium, cafeteria, parking garage, and gymnasium. Its white marble exterior will match that of the present Senate Office Building.



THE Nashville Bridge Company will gladly quote on structural steel requirements anywhere in the South and Southwest. Our skill in the fabrication and erection of intricate steel structures is well known. We are particularly qualified to supply the Power Distributing Industries with transmission towers and switchyard structures—hot-dip galvanized after fabrication. Fabrication and erection of both steel and machinery for movable type bridges is a specialty. Look to Nashville for simple steel requirements as well as intricate structural jobs.

Plants and offices in Nashville, Tennessee and Bessemer, Alabama. We also own and operate the Bessemer Galvanizing Works—largest galvanizing plant in the South.

NASHVILLE BRIDGE COMPANY
NASHVILLE, TENN. — BESSEMER, ALA.



sary to finance the anti-stream-pollution measure is just a "drop in the bucket" compared with the money that we are spending in foreign countries on similar projects.

Lanham said, "in the interest of America's security some of these may be necessary, but at the same time we must take care of the problem at home. I voted against an amendment which would have weakened the bill and then voted for its passage."

► From available statistical records it is now becoming apparent that the only significant change in southern economy by reason of recent minimum wage boosts is to be seen in higher average hourly and weekly wages for the region. While a very few marginal operators in logging and similar enterprises have been forced to reorganize or go out of business, no overall effect on southern business as a whole is noticeable after a month's experience with the new rates.

► Repulsed once before in Florida, the Mediterranean Fruit Fly is making its second bid to run the Florida fruit farmers out of business. Florida's congressman Fascell is seeking an appropriation of from three-quarters to a million dollars to fight the pest and

warns that unless subdued, the invader may change the complexion of farming not only in Florida, but throughout the entire South, and even the entire United States.

► Claiming that "kill-joy taxes are putting an unfair and harmful burden on certain areas of our recreation", U.S. Senator J. Glenn Beall (Rep. Md.) prepared to introduce legislation designed to remove the Federal excises from admissions, sporting goods, playing cards, club dues and cabaret checks.

"It is completely incongruous," said the Senator, "for us to promote widespread recreational programs and, at the same time, maintain taxes which have such a hostile effect on our purpose."

► Natural gas is being piped from lush Southwestern fields to more and more states in the South and Southeast.

Among important expansions being reviewed by Federal Power Commission for approval are the following:

In Louisiana, Mississippi, Alabama, Georgia, South Carolina, North Carolina, Virginia and Maryland, 277 miles of natural gas pipe line will increase the volume by 104 million cubic feet daily.

In North Carolina, Trans-Carolina Pipeline Corporation of Raleigh, will construct 71 miles of 18-inch pipeline from Moore to a point just north of Lancaster, S. C., and other lines to Laurinburg, Fayetteville, and Farmville.

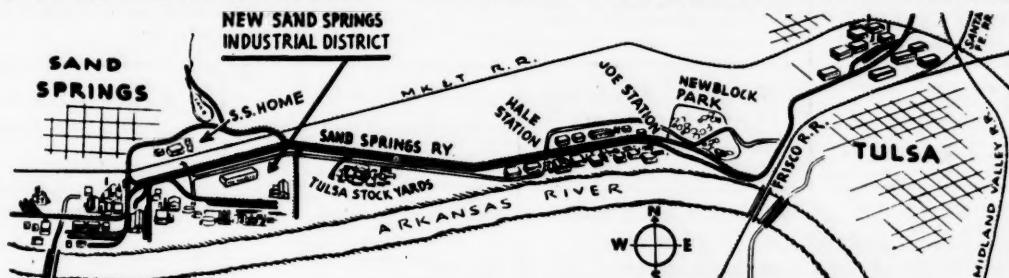
► Business in the South continues good. In the Nation at large, there have appeared a few weak spots. Most notable of these latter is the Detroit Area where declining auto sales have brought heavy cutbacks in employment.

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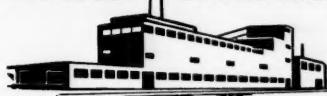
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Going Up! — Normally, when Governor Marvin Griffin of Georgia seeks volunteers for a committee, he has little difficulty in picking and choosing from a number of excellent men. This was not the case recently when he wanted a five-man committee to inspect the state capital dome in Atlanta. Many of the politicians, especially the fat ones, fled as from the plague. This strange action was caused by the fact that the committee would be called upon to make a personal inspection of the dome—a procedure requiring the clambering of 222 steep steps.

Pure Bliss—Next to being shot at and missed, nothing is quite so satisfying as an income tax refund.

Where's My Wandering Bus Tonight? — The state highway patrol in Florida is ruefully anticipating a congestion such as the state's highways experienced a few years ago when all errant bus drivers on the prowl drove their vehicles to the Land of Sunshine. The new outbreak began when a man in a bus driver's uniform showed up in Orlando, Florida, driving an empty bus which it later developed he'd appropriated in Kansas City. He pulled into the garage, asked that the bus be serviced, tried to cash a few checks and then must have heard the manager calling the police, for he suddenly ran out of the garage and hasn't been captured yet.

Injustice—Aubrey H. Osborne, Sr. has protested violently that an injustice was done when his son was fined \$25 for driving an automobile in Fort Lauderdale, Florida. The arresting officer agreed in court that the younger Osborne was a good driver. "There's no reason to give him a ticket," the elder Osborne protested. "He's been driving a car since he was two." Junior Osborne, it develops, is now all of four years old.

Hide and Seek—Sheriff Bryan Clemonns, of Baton Rouge, Louisiana, has a trusty bloodhound named Red—or rather he had one such dog. The other day, he put Red's nose on the trail of a missing thief. With the true instinct of the pure-bred bloodhound, Red gave tongue and started off along the trail, but the scenario did not proceed exactly in accordance with the script from that point on. Not only is the thief still missing, but so is Red, the eager bloodhound. Sheriff Clemonns comments ruefully: "Whoever heard of a lost bloodhound? Everything happens to me."

Focus—One of the few triple puns in the English language deals with the Texas young men who brought new ranch and asked their ma what to call it.

"Call it 'Focus,'" she ordered.

"But why, ma?"

"Because that's where the sons raise meat."

("Sun's rays meet"—ouch!)

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The full length door in the center is a railroad opening—the track enters the building through another Mahon power operated rolling steel door at the far end of the building. This center door can be opened independent of the other two for passage of railroad cars. The two rolling steel doors

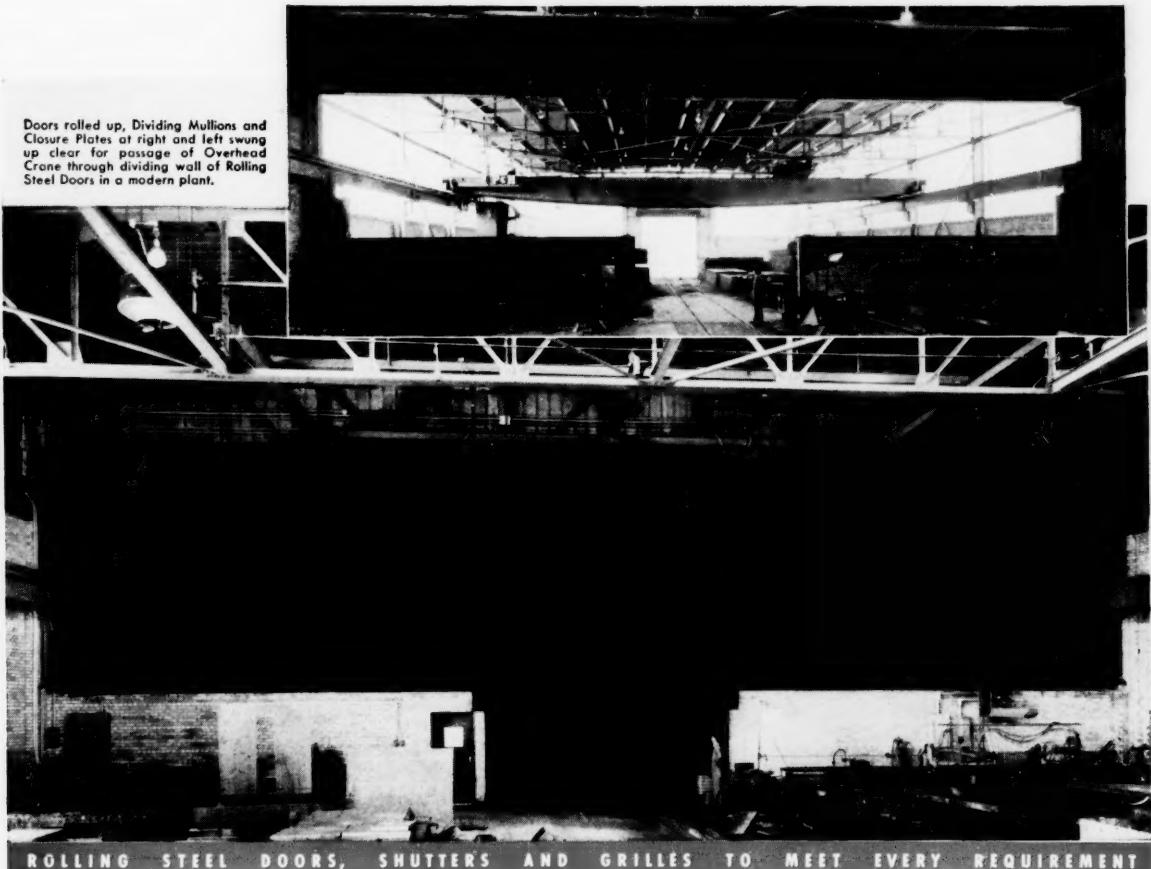
on either side, above the curb wall, are opened only for passage of the overhead crane.

Similar installations have proved most practical in school gymnasiums where it is desirable to divide the gym floor for certain activities. In these installations, aluminum or stainless steel doors are employed with sliding mullions which are moved to either side clear of the gym floor when the dividing wall is rolled up. The operation is accomplished electrically in a matter of minutes.

Mahon experience in this type of installation is extensive. Mahon engineers will cooperate fully in working out details of rolling steel doors for craneway closures or quick-acting, roll-up dividing walls to meet virtually any requirement.

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